Filtertechnik
FIRST FOR FILTRATION

PARTICLEPAL

FIRST FOR DIAGNOSIS

Filtertechnik's award winning Particle Pal displays live cleanliness readings for particulate (ISO/NAS/SAE)

The Particle Pal displays instant cleanliness readings for oils and fuels allowing service engineers the ability to take pre-emptive action.

Extensively specified into:

- Plant Hire
- Steel Production
- Manufacturing
- Automotive Industry
- Injection moulding

Introduction

The Particle Pal is a self-contained system, complete with integral pump and governed flow rate. Whether on-site or in the laboratory, the Particle Pal will provide instant cleanliness readings to allow you to fully understand the condition of your oils and fuels.

Samples from oil and fuel tanks or sample bottles can be analysed quickly and accurately, thereby minimising the frequency of laboratory analysis. This pro-active maintenance approach is ideal for sites with multiple tanks, thereby making the Particle Pal the ultimate survey and diagnostic unit.

Powerful trending software will allow for data to be displayed in graphical format for real-time trend analysis. The Particle Pal will identify the cleanliness code of the fluid which will alert to the need for corrective action. The Particle Pal is the most cost effective oil/fuel cleanliness monitor on the market.

FEATURES

- Self contained with on-board pump
- Real time detection of solid contamination and moisture
- Real time graphic display via software
- Real time density check with rapid response time
- Alerts to the presence of water and diesel bug in oil and fuels
- Laptop connectivity for data transfer
- Archive creation via Excel

BENEFITS

- Compact, lightweight unit with robust casing
- Viscosity range (1-424 cst)
- Accurate, repeatable and consistent results
- Instantly measure the quality of oils and fuels
- Ideal survey tool for field and laboratory use
- Samples from a live delivery, fuel tank or fuel polishing cabinet

FUEL MONITORING

Modern fuels with ever increasing biofuel percentages, have created several challnges to industry in recent years. Fuel blends are highly hygroscopic which enables them to absorb greater amounts of moisture. This in turn leads to higher levels of microbiological activity which are seriously troublesome to fuel systems.

The Particle Pal will allow you to quantify the level of solid contamination in your fuel and will alert you to the presence of high moisture levels and diesel bug.

OIL TESTING

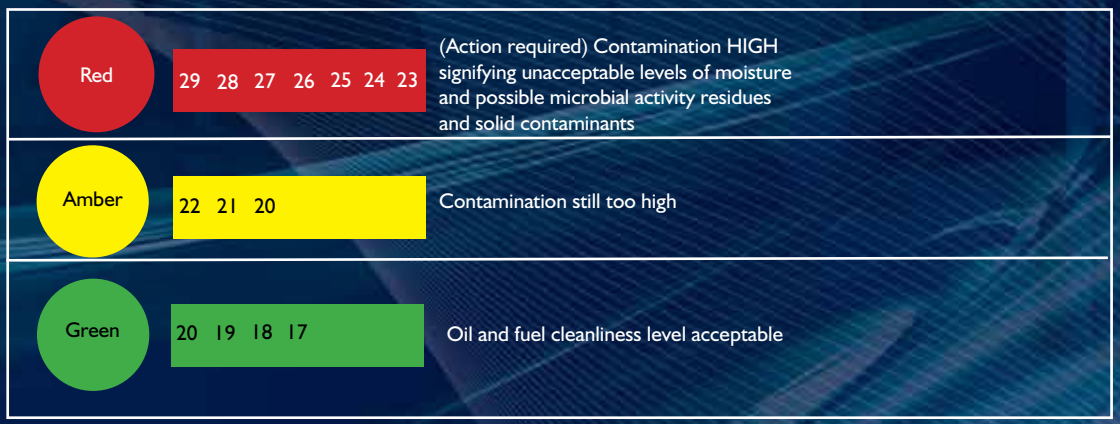
In Hydraulic and Lubrication systems, real time cleanliness data can prevent serious system failure and component damage. By trending oil cleanliness in real time, the necessary protection can be put in place to protect sensitive components. Samples can be taken directly from the reservoir of fluid power systems or from a oil sample taken from the system.

HYDRAULIC SPECIFICATION FOR FLUID POWER COMPONENT CLEANLINESS

Element	Type	ISO Code 4406
Pump	Piston (slow speed, in line)	22/20/16
	Piston (high speed, variable)	17/15/13
	Gear	19/17/15
	Vane	18/16/14
Valve	Directional	20/18/15
	Pressure Control	19/17/14
	Flow Control	19/17/14
	Check Valve	20/18/15
	Cartridge Valve	20/18/15
	Proportional	18/16/13
	Servo valve	16/18/15
Motor	Axial Piston	18/16/13
	Radial Piston	19/17/13
	Gear	20/18/15
	Vane	19/17/14
Acutator		20/18/15
Station Nozzle	World Wide Fuel Charter Cleanliness standard for fuel delivered	18/16/13
EN590 Fuel		18/16/13

PLEASE NOTE THAT THE TYPICAL CLEANLINESS OF NEW HYDRAULIC OIL FROM A MANUFACTURER IS 20/18/15

What do Particle counts mean and how can they be interpreted into oil and fuel cleanliness



With diesel the maximum recommended allowable water content level is 200ppm. When high water content is present, a series of problems may occur:

- Fuel oxidation
- Formation of paraffin and asphalt long chain polymers
- Microbial growth and associated contamination
- Additive depletion
- Acid formations
- Gel formations

PARTICLE PAL
TECHNICAL SPECIFICATION

Case	HPX® high performance resin construction with press & pull latches and durable soft-grip handles.
Dimensions	360mm (W) x 290mm (D) x 170mm (H)
Weight	5.5kg
Battery Type	Lithium Ion
Run time	Up to 4hrs dependent upon fluid viscosity
Charge time	5 hrs
Principles of Measurement	Laser-based sensor uses light blocking (extinction) technology for particle detection; particles passing through an optical flow cell, block an amount of laser light proportional to the size of the particle. The "shadows" are registered by an optical receiver and the information processed and displayed on a bright red LED
Modes of operation	Tank sampling
	Bottle sampling (minimum sample 200ml)
Displayed information	Fluid cleanliness to ISO4406 (4u, 6u, 14u, 21u), SAE 4059, NAS1638 Fluid Temperature User programmable cleanliness level alarm
Information update time	2min (or selectable through software)
Software	PC based software for trending, logging and analysis. Log to .txt files for easy transfer to Excel
PC connection	USB (B type connection)
Viscosity range	1 –424 cst
Fluid compatibility	Diesel & mineral oils
Fluid temperature	-10…60°C (oils) -10…50°C (diesel)
Environmental:	Lid closed: IP67 (un-certificated) Lid open: IP54 (un-certificated)
Ambient temperature	-40…85°C
Maximum humidity	97% relative humidity, non condensing
Supplied	1m suction tube fitted with 80 MESH strainer (6mm OD) 1m discharge tube (6mm OD) Battery charger (UK 3 pin plug) PC software USB data transfer cable Manual
Certification	PC9001 factory calibration certificate CE declaration
Verification frequency	12 months recommended
PC requirements	Windows XP, Vista, Windows 7, 8 & 10 with USB port

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Filtertechnik Ltd, 1 Central Park, Lenton Lane, Nottingham, NG7 2NR
Tel: +44 (0) 115 9003 600 Fax: +44 (0) 115 9868 875
Free Phone: 0800 0087 456 Email: sales@filtertechnik.co.uk

www.filtertechnik.co.uk