



**PAMAS** is the premier independent manufacturer of particle counters.

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**PAMAS** delivers OEM products worldwide.

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**PAMAS** expertise is based on experience with renowned partners.  
The manufacture of OEM products for **CATERPILLAR**<sup>®</sup> dates back to 1997.

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**PAMAS** has already sold thousands of high-class optical particle counters with excellent and durable service performance.

# PARTICLE COUNTERS FOR OIL CONTAMINATION ANALYSIS

PAMAS offers particle counters for various application profiles. We differentiate Automatic Particle Counters for laboratory applications, field measurements and long-term condition monitoring. Laboratory instruments are designed for easy-to-use batch sampling, portable instruments are ideal for field work in batch and online sampling, and online instruments are used as fixed installations for online condition monitoring.

## PAMAS COMPANY PROFILE

- Founded in 1992, PAMAS develops, produces and sells high quality products for particle counting and particle size analyses. The highly sophisticated optical sensors are manufactured at the main plant in Germany.
- Due to its own department for Research and Development, PAMAS is a market leader for high-quality particle counting systems.
- PAMAS systems are a standard reference for many competitors to perform their calibrations.

Fixed installations like the **PAMAS S50** are used for online sampling and for long-term Fluid Condition Monitoring.

Portable particle counters like the **PAMAS S40** are used for field measurements. With the help of these instruments, measuring results are produced immediately where they are needed. **PAMAS S40** is simple to handle, but offers powerful possibilities as it can be used both for batch and online sampling.

Particle analysing instruments for laboratory measurements like the **PAMAS SBSS** are used for batch sampling. As all parameters can be changed by the user, laboratory particle counters are a powerful tool for flexible and convenient measurements.

Automatic Bottle Samplers like the autosampler **PAMAS AS** enable unattended batch sampling. This instrument is indispensable for use in laboratories which require large amounts of sample measurements per day.



**PAMAS S50**



**PAMAS S40**



**PAMAS SBSS**



**PAMAS AS**

# THE IMPORTANCE OF PARTICLE COUNTING

Clean fluids should not contain solid particles. So it is of utmost importance to determine whether a liquid is contaminated or not. For this purpose, the German company PAMAS develops and manufactures Automatic Particle Counters. The advanced and highly sophisticated sensor technology enables the detection of particle sizes down to 0.5 microns.

It is impossible to detect particles in liquids and to analyse the actual level of contamination by means of visual perception only. A variety of analysing technologies can be used to measure particle contamination in liquids. However, conventional methods such as gravimetric or microscopic membrane analyses are time-consuming, they depend on the operator's skills and therefore, they are also very subjective.

Automatic particle counters offer the quickest and most objective method of particle contamination analysis in liquids. These measuring instruments count solid particles and classify them according to their size. Every solid contaminant is measured in the individual size range of the analysing sensor.

Particles circulating at high speed and pressure in the liquids of turbines, power plants, gearboxes and offshore applications are capable of damaging mechanical parts of the system. Particle contamination affects

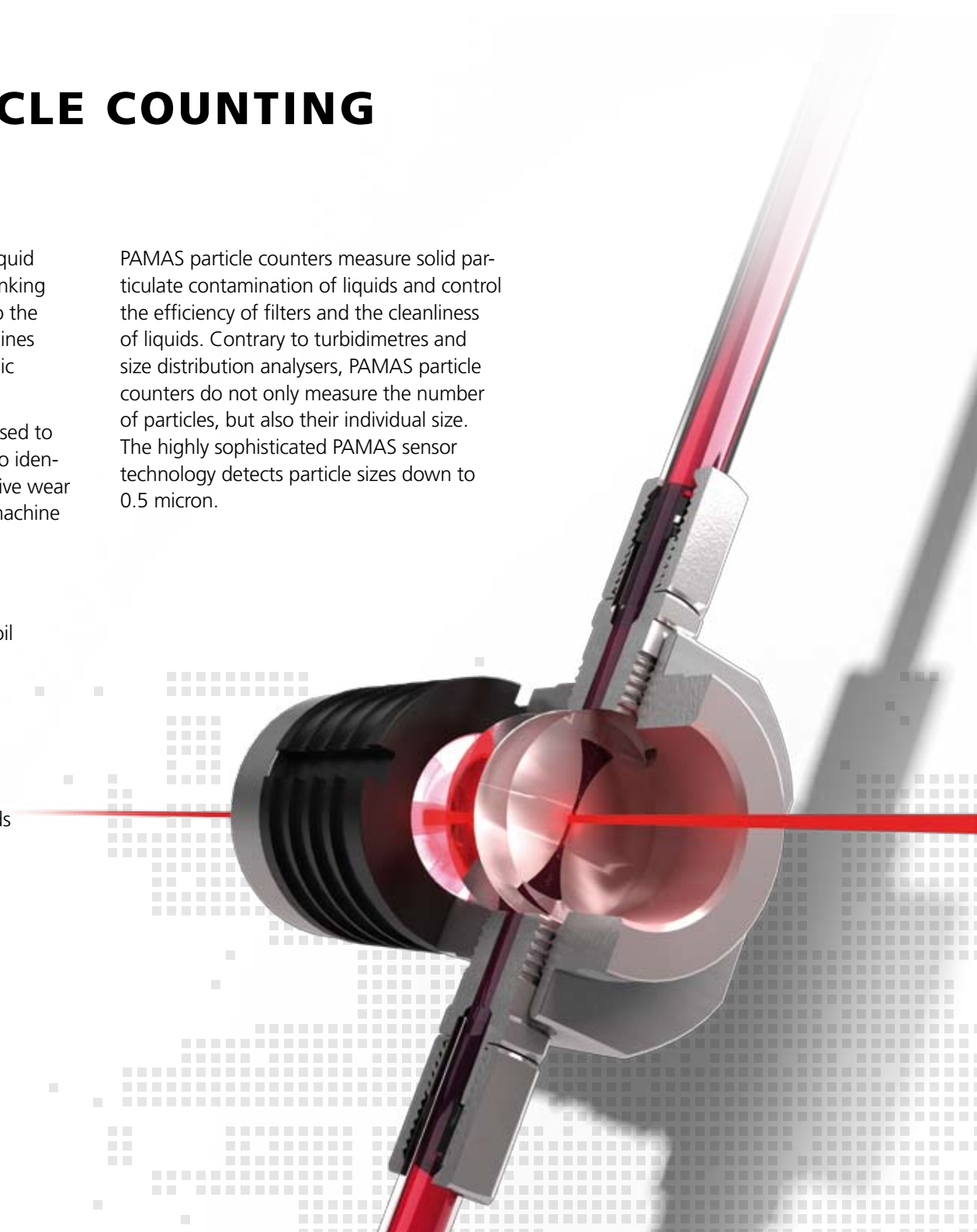
not only the quality of a specific liquid (e.g. pharmaceutical solutions, drinking water and process water), but also the connected components and machines (e.g. aviation turbines and hydraulic components).

Particle measuring technology is used to control cleanliness of liquids and to identify quality deficiencies and excessive wear in order to avoid eventual costly machine failures.

## APPLICATION EXAMPLES:

- Particle contamination in lube oil will damage the bearings of moving components.
- Contaminated hydraulic liquids will cause mechanical failures on pumps and valves.
- Water and pharmaceutical fluids containing particles will lead to health injuries.

PAMAS particle counters measure solid particulate contamination of liquids and control the efficiency of filters and the cleanliness of liquids. Contrary to turbidimetres and size distribution analysers, PAMAS particle counters do not only measure the number of particles, but also their individual size. The highly sophisticated PAMAS sensor technology detects particle sizes down to 0.5 micron.



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