

Optical Particle Classification



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With prior knowledge of the wear metals and contaminants present in a lubricating system, it may be determined if that equipment is operating properly or if preventive maintenance is required. OPC is a valuable trending tool to assist in condition monitoring programs.

Optical Particle Classification (OPC) combines the standard oil analysis techniques of:

- Particle counting.
- Advanced shape classification.

OPC is good for particle count and classification of:

- Wheel Motors
- Differentials
- Transmissions
- Gear Boxes
- Wheel Hubs
- Final Drives



Particle Counting

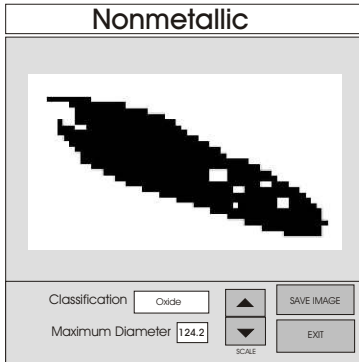
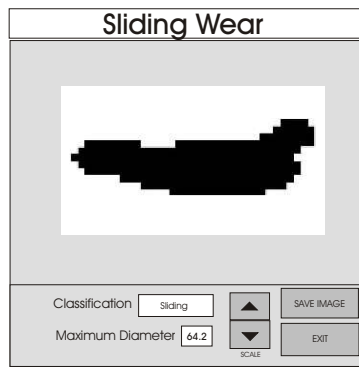
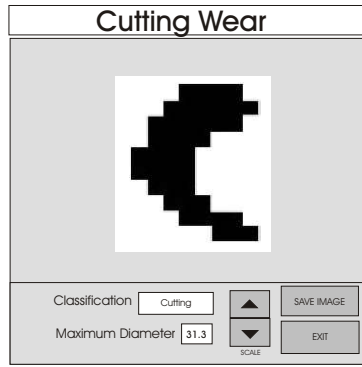
Thousands of images are processed to obtain good counting statistics. Particles are analyzed and quickly differentiated by size. Using the direct imaging capability of the latest equipment, the exact particle size of the contaminant is quickly determined. This application is ideal for samples where a normal ISO Count is inappropriate or difficult.

Advanced Shape Classification

The OPC method recognizes particles greater than 20 μm by using a neural network. An algorithm is used to sort particles into many categories.

Fluid Life

Advanced Shape Classification



Cutting	Shearing between moving surfaces.
Sliding	Adhesive wear.
Fatigue	Metal stress that leads to wear particles.
Nonmetallic	Non wear metal contaminants.
Fibers	Fibrous Materials.

Advantages of our Methodology

- Accuracy of Laser technology.
- High grade video analysis.
- Comparative contaminant database.

Why is OPC one of the most current and effective analysis methods?

1. Intrinsically accurate particle counting.
2. Particle shape recognition.
3. Good reproducibility.
4. Ability to measure samples with very high particle concentration.



Maintenance Solutions

Once the maintenance technician has the testing information to determine if there is wear metals or contaminants within a component a course of action can be determined.

If these conditions exist the maintenance professional could:

- ✓ Increase frequency of oil change intervals.
- ✓ Modify the maintenance schedule based on the run time of the specific component.

...because what happens on the inside really counts



9321 - 48 Street
Edmonton, AB T6B 2R4
Phone: (780) 462-2400
Fax: (780) 462-2420
Toll Free: 1-877-962-2400

95 Copernicus Blvd.
Brantford, Ontario N3P 1N4
Phone: (519) 720-9700
Fax: (519) 720-9705