A comprehensive solution for cleaning & analysis of hydraulic & lubricating oils...

KLEENTEK FERROCARE
ELC
Electrostatic Liquid Cleaners

Electrostatic Liquid Cleaning does efficiently what mechanical filtration can never do.

Damage that small particles can do

Particles in 1 mg/lt. oil (ACFTD)

<table>
<thead>
<tr>
<th>Size</th>
<th>100µm</th>
<th>50µm</th>
<th>10µm</th>
<th>1µm</th>
<th>0.1µm</th>
<th>0.01µm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strainer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filtration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centrifuge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELC Cleaning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virus &amp; Carbon Black</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• The smaller the particles, the higher their concentration
• Particles which cause wear are between 0.2 & 0.6 microns
• The ELC removes all sizes & types of particles equally well.

Working: The ELCs effectiveness lies in its simplicity.

As fluid flows through the cleaning cell, the particles deposit on either the negative or positive electrode. The ELC removes all sizes & types of particles including bacteria & viruses.

Model Selection Guide

<table>
<thead>
<tr>
<th>Conventional Hydraulics (max. quantity)</th>
<th>ISOVG</th>
<th>32</th>
<th>46</th>
<th>68</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>ELC 8LP</td>
<td>2500 l</td>
<td>1700 l</td>
<td>1100 l</td>
<td>600 l</td>
</tr>
<tr>
<td></td>
<td>ELC 25A</td>
<td>6000 l</td>
<td>4200 l</td>
<td>2800 l</td>
<td>1500 l</td>
</tr>
<tr>
<td></td>
<td>ELC 50C</td>
<td>12000 l</td>
<td>8300 l</td>
<td>5600 l</td>
<td>3000 l</td>
</tr>
<tr>
<td></td>
<td>ELC 100LP</td>
<td>30000 l</td>
<td>20000 l</td>
<td>14000 l</td>
<td>7600 l</td>
</tr>
</tbody>
</table>

For NAS 7 and better, derate the above quantity by 50%.

Operating Conditions:
- Mineral base oils, except IC engine oil
- Moisture content 500 ppm max.
- Temperature 60°C max.
- Standard power source: 415v 3ø 50Hz
- For high temperature applications & fire resistant fluids, suitable models are available.
Low Vacuum Dehydration does efficiently what centrifuging can never do.
The LVDH uses a comprehensive process to remove water and gases from oil at temperature lower than 53° C, thus drastically reducing oxidation during the dehydration process. The LVDH is a quick, inexpensive and automatic system that overcomes centrifuging’s major drawbacks, especially that of oxidation, emulsified water retention, power consumption & high maintenance.

Working:
Oil is drawn into the vapouriser via the vacuum pump and heater. Water boils below 53° C under vacuum - an efficient condensor collects evaporated water. Dissolved air and gases from oil are bled to the atmosphere via the vacuum pump.

### FUNCTION OF CATALYSTS

<table>
<thead>
<tr>
<th>Test</th>
<th>Catalysts (Metal)</th>
<th>Water</th>
<th>Time (Hrs)</th>
<th>Acid Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>nil</td>
<td>nil</td>
<td>3,500</td>
<td>0.17</td>
</tr>
<tr>
<td>2</td>
<td>nil</td>
<td>exist</td>
<td>3,500</td>
<td>0.90</td>
</tr>
<tr>
<td>3</td>
<td>iron</td>
<td>nil</td>
<td>6,500</td>
<td>0.65</td>
</tr>
<tr>
<td>4</td>
<td>iron</td>
<td>exist</td>
<td>400</td>
<td>8.10</td>
</tr>
<tr>
<td>5</td>
<td>copper</td>
<td>nil</td>
<td>3,000</td>
<td>0.89</td>
</tr>
<tr>
<td>6</td>
<td>copper</td>
<td>exist</td>
<td>100</td>
<td>11.20</td>
</tr>
</tbody>
</table>

**Note:**
1. Time: hours for reaching a certain level of acid value.
2. Test oil is turbine oil with viscosity of 32cSt/100°F (37°C).
3. Tested oil temperature is 200°F (93°C).

Acid value indicates formation of "Sludge" and sticky resinous matter which forms hard deposits on valves, pipes.

### Features:
- Fully automatic operation.
- Ultimate water removal through oil recirculation - to zero-free water content or to 50% below saturation level.
- Reduces water content in a single pass by 0.25% - 1.5% depending on inlet oil temperature.
- Removal of soluble gases and air.

**Application Areas:** Hydraulic oils • Turbine oils • Lubricating oils • Gear oils.

### Model details

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity</th>
<th>Condensor</th>
<th>Vacuum Pump</th>
<th>Weight</th>
<th>Dimensions (mm)</th>
<th>Electrical L x W x H</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-600</td>
<td>8-10 LPM</td>
<td>REFRIGERATED</td>
<td>100 LPM</td>
<td>350 kg</td>
<td>1480 x 780 x 1280</td>
<td>6 Kwh @ 415 volts 30, 50 Hz</td>
</tr>
<tr>
<td>L-900</td>
<td>13-15 LPM</td>
<td>REFRIGERATED</td>
<td>180 LPM</td>
<td>480 kg</td>
<td>1560 x 750 x 1490</td>
<td>8 Kwh @ 415 volts 30, 50 Hz</td>
</tr>
<tr>
<td>L-2100</td>
<td>30-35 LPM</td>
<td>REFRIGERATED</td>
<td>300 LPM</td>
<td>595 kg</td>
<td>1560 x 930 x 1490</td>
<td>16 Kwh @ 415 volts 30, 50 Hz</td>
</tr>
</tbody>
</table>

Higher capacity LVDH models available. All dimensions are subject to change without notice.
Contamination
Checking
Kit

Run contaminated oil through a 'Patch Test' to visually assess levels of contamination for further action.

Request for a 'patch test' report. Our Service engineers are equipped to perform these on the go.

Get accurate particle counts and ISO / NAS / SAE codes online and on your PC.

Instantly spot contamination level changes and avoid system damage. Take the guess work out of checking. Get LIVE accurate online particle counts.

LOW COST solution to alarm & notify you of changes in contamination levels. Ideal for plotting ISO / NAS cleanliness trends.

The PC9001 gives you direct particle counts in ISO / NAS / SAE codes online and on your PC. The PC9001 allows your preventative maintenance to be planned with real time hard data. Adapts itself to trend monitoring through RS232 output.

Principle of operation: Laser

| NAS 1638 Contaminants' Specifications (per 100 ml.) |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 00 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 5-15μm | 125 | 250 | 500 | 1,000 | 2,000 | 4,000 | 8,000 | 16,000 | 32,000 | 64,000 | 128,000 | 256,000 | 512,000 | 1,024,000 |
| 15-25μm | 22 | 44 | 89 | 178 | 356 | 712 | 1,425 | 2,850 | 5,700 | 11,400 | 22,800 | 45,600 | 91,200 | 182,400 |
| 25-50μm | 4 | 8 | 16 | 32 | 63 | 126 | 253 | 506 | 1,012 | 2,025 | 4,050 | 8,100 | 16,200 | 32,400 |
| 50-100μm | 1 | 2 | 3 | 6 | 11 | 22 | 45 | 90 | 180 | 360 | 720 | 1,440 | 2,880 | 5,760 |
| >100μm | 0 | 0 | 1 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1,024 |

An accurate & simple solution to detect moisture in oil.

MOISTURE DETECTOR

Moisture in oil is the biggest enemy of hydraulic & lubricating oils ... even bigger than particulate contamination.

There is a clear nexus between presence of moisture and acid / sludge formation in oil. Now with the Moisture Detector, users have a quick, accurate & simple solution to measure moisture in oil. Displays moisture in ppm and saturation level in percentage.

Principle of operation: Capacitance

Integration with Vacuum Dehydrator and Electrostatic Liquid Cleaner -

A Moisture Sensor installed in the Vacuum Dehydration Unit switches on the Dehydrator and the Electrostatic Cleaner automatically.

Now with early detection integrated, users have a formidable productivity enhancing solution.
FERROCARE
Magnetix Separator & Gear box oil filtration

Gear Box Oil Filtration Systems

MS6 DHU - Magnet Strainer with mechanical filter
Reduce gearbox downtime while extending oil drain intervals. These units are used for removing ferrous contamination from gear boxes. The MS6 DHU unit can be attached directly to the gearbox and removes metallic wear particles efficiently.

Extend coolant life ... Improve product quality...!
Hi-power magnet separators for cutting oils, coolants, honing & washing fluids. The MAGNETIX range of premium quality magnetic separators, are used in operations in varied applications.

Some application areas: Surface grinding, Centreless grinding, Internal / external grinding, Honing, Gear grinding, Superfinishing, Electrical discharge machine.

Models available: From 20 to 400 LPM flow rate.

From EPT Canada

Solutions for Phosphate Ester, FRF fluids, control fluids in power plants

EHC System for contamination control & maintenance of EHC fire resistant fluids (Phosphate Ester)

Ferrocare now offer solutions for Phosphate Ester fluid maintenance. Remove 100% of contaminants and restore fluid systems to peak performance, including the resistivity requirements.

- Remove & maintain acid number to < 0.1 mg KOH/gm with ICB element
- Eliminate Servo Valve Sticking
- Maintain moisture below 200 ppm and reduce acid levels build up.
- Integrated TMR (Nitrogen generator) removes oxygen and combustible dissolved gases
- Remove particulate & insoluble gel / sludge, with high efficiency.

FERROCARE also offers

Noritake NORITAKE CO., LIMITED Abrasives
CHUETSU METAL WORKS CO., LTD. Copper moulds for casting of steel
NACHI NACHI FUJIKOSHI CORP. HSS & Hydraulics

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Helping you ... work better ... under pressure