At Unifin the cooling of Electric Machines is our only business. Every resource in the company has been directed towards research and development to acquire world leading heat transfer technology and manufacturing processes. Today, this investment has established Unifin as a global leader in the supply of:

- Transformer Oil Coolers
- Transformer Oil Pumps
- Transformer Oil Isolation Valves
- Generator Coolers
- TEWAC Motor Coolers

Our Brands
Unifin is a global company with worldwide recognized brands in transformer oil coolers, transformer oil pumps, generator coolers and TEWAC motor coolers.

- HeatSink
- RCP
- Formerly GE Tidewater Heat Transfer Products
- RCP
- PowerCords

Global Presence
Headquartered in London, Ontario, Canada. Unifin is a global organization with manufacturing locations in Canada, the United States and China.

[Image of Centrifugal and Axial Flow Transformer Oil Pumps]

The Hottest Name in Cooling

A Precision Bearing Monitoring System

Six precision, ultrasonic sensors are mounted in both thrust and radial bearings at strategic points, becoming part of the bearing surface. A signal from the TecSonic® instrument excites a piezoelectric crystal in each sensor which emits a high-frequency sound which reflects off of the face of the sensor re-exiting the crystal which sends a signal back to the instrument. The instrument translates the echo time into distance (sensor length) and bearing location. A multiple array of sensors provides the safety of redundancy and accuracy of +/- .0002". Measurements are compared to the baseline readings to determine bearing wear has occurred.

Power Cords
Helps to ensure transformer pump and cooling fan motor performance. The cords have been fabricated to withstand ultraviolet rays, oil, water and extreme weather conditions. A unique Overmold Protectant restricts moisture from entering at the connecting points and prevents any movement of cord leads.

Common Isolation Valves

<table>
<thead>
<tr>
<th>SIZE</th>
<th>STYLE</th>
<th>BODY SHAPE</th>
<th>THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V200</td>
<td>5&quot; ROUND</td>
<td>2-9/16&quot;</td>
</tr>
<tr>
<td>4&quot;</td>
<td>V401</td>
<td>9&quot; ROUND ANSI</td>
<td>2-1/4&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>V601</td>
<td>11&quot; ROUND ANSI</td>
<td>5&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>V804</td>
<td>13&quot; ROUND ANSI</td>
<td>2-1/2&quot;</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TRANSFORMER APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE PRESSURE RELAY</td>
</tr>
<tr>
<td>GE RADIATOR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BOLT HOLE</th>
<th>BOLT PATTERN</th>
<th>BOLT CIRCLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5-7/8&quot; x 5-7/8&quot;</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>7&quot; x 7&quot;</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9.5&quot; BC</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GASKET GROOVES</th>
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</thead>
<tbody>
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</table>

| GE RADIATOR |
| 9.5" BC |

| GE PRESSURE RELAY |
| 10" BC |

| GE RETROFIT |
| 10" BC |

| MCGRAW VS 50'S VINTAGE |
| 11.5" BC |

| MCGRAW EDISON |
| 11.5" BC |

| MCGRAW RETROFIT |
| 11.5" BC |

| WH RADIATOR |
| 11.5" BC |

| WH RETROFIT |
| 11.5" BC |

| 50's VINTAGE WH |
| 11.5" BC |

www.unifin.com
A division of Inland International, Cardinal Pumps and Exchangers both manufacturers and remanufacturers of hundreds of different configurations of pumps used in conjunction with our wide range of transformer oil coolers. These are applied for either Transformer Oiler cooler/pump applications or directly to electrical utility/industrial transformer and fans. They are available in both sourcetungsten and weld face redesigns and are designed to perform in extreme temperatures, with extra long life and very low maintenance.

New Pumps

• Several new sizes 3D size showers can reduce overall cooling time.
• Large thrust face sleeve bearings for long life minimum wear.
• Pump continuous duty operation temperatures ranging from –40˚C (–40˚F) to 100˚C (212˚F).
• Pump and motor units pressure tested to assure integrity.
• New pumps undergo significant test to assure integrity.
• Pump and motor units pressure tested to assure integrity.
• Pump and motor units pressure tested to assure integrity.
• Precision Sleeve Bearings

Cardinal offers three bearing types: standard sleeve bearing, for Transformer (OEM-Sale Div.) pumps and impellers, with Oring seal bearing with a “T-Ram botanical bearing wear resistant and heat resistant.

Ground Shafts & Dynamic Balancing

All Cardinal sleeve bearings have the bearing journals and thrust faces ground on center to assure alignment and surface finish. All pump shaft, impeller and motor assemblies are dynamically balanced for long term reliability of the complete operation.

Fully Pressure Tested

All Cardinal pump and motor units are pressure tested to 50 PSI to assure the integrity of the complete unit.

Electrical Tested

Motor winds are checked to ensure electrical integrity.

Special coatings applied to protect against rust and inside and outside

Both options available with TecSonics Bearing Wear Monitoring System

Product Features

Re-manufactured Pumps

• Suitable for new or re-manufactured applications
• New pump shafts are re-ground
• Epoxy Paint System
• Power Cords and Installation Gaskets

Field retrofit kits are available for Westinghouse and Mitsubishi Edison valves

New valves can be designed to suit specific applications, if required. Avoid future feed-outage due to this simple and reduce incremental maintenance costs due to unplanned oil handling.

Heavy Duty Transformer Oil Valves

Cardinal Pumps & Exchangers also manufacture a line of heavy-duty butterfly type transformer oil valves ranging from 2” to 10” in size including ANSI standard and OEM specific flange configurations. Over 40 valve designs are available for on- site transformers or as replacements to existing transformer cooling loops to isolate the cooling equipment (pumps, coolers or radiators).

Features and Options

• Robust in design so that it withstanding or mishandling during factory / field installation will not result in malfunctions of the valve.
• All valves are designed to hold full vacuum.
• All valves are pressure tested to 50 psi.
• Valve design temperatures are –40˚C (–40˚F) to 150˚C (275˚F).
• All units are manufactured from non-combustible or metal sealed material to withstand outdoor exposure to external surfaces and hot transformer oil internal surfaces.
• Valve bodies are aluminum or steel.
• Valve discs are stainless steel.
• Backward shaft tip seals and disc Orings are valve.
• Bearings are locked to prevent loosening vibration during operation.
• In the open position, the valve disc will not oscillate or fluctuate. When the valve is to be used the suction side of the pump the disc operates as a fluid stoppage; thus enhancing the pump’s performance.
• The operating handle displays the valve “OPEN” and “SHUT” positions and is designed so it can be manually locked in either position with a bolt (optional).
• An optional “padlock” locking feature is available on some designs.
• Values are shipped individually packaged and sealed in specially designed bags to protect from contaminants and weather.
• Nibile gaskets are provided to match the gasket in each value.
• Several common designs are stocked for immediate shipment.

Field retrofit kits are available for Westinghouse and Mitsubishi Edison valves

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Both options available with TecSonics Bearing Wear Monitoring System

Bearing Wear Monitoring System

• Standard Features Include:
  • High Quality Cardinal Valve Body
  • 30/32” x 1” Pilot Bolts
  • A “PADLOCK” feature is available on some designs

• Optional Features Include:
  • Several common designs are stocked for immediate shipment.
  • An optional “padlock” locking feature is available on some designs.
  • Values are shipped individually packaged and sealed in specially designed bags to protect from contaminants and weather.
  • Nibile gaskets are provided to match the gasket in each value.
  • Several common designs are stocked for immediate shipment.