ICB Element Upgrades
Eliminate & prevent EHC servo valve sticking and reduce fluid maintenance requirements.

Replaces Fuller’s Earth and Selexsorb for EHC systems using phosphate ester.

Eliminate the largest source of fluid contamination and reason for EHC failures.

Remove & maintain Acid Number to < 0.05.

Eliminate gels & deposits by removing dissolved metals (Ca, Mg, Fe, Na, Si, Al).

Phosphate Ester Fluids
For most EHC systems the primary operating fluid is phosphate ester. This is a very safe and effective fluid that when maintained in a narrow condition range regarding acid number, water and particulate can deliver years of trouble-free optimum performance. When the fluid is not properly maintained the result is servo valve failure. Other issues include accelerated acid production, loss of resistivity, poor air release, premature fluid replacement, costly system flushes and fluid degradation related component failures.

Dissolved Metals, Gels & Deposits
Airborne contamination (i.e. seawater & agriculture - Cl, Mg, Ca, Na) and traditional acid scavenging elements (Fuller’s and Selexsorb - Al, Si, Na) contribute dissolved metals to EHC fluid.

As dissolved metals accumulate they act as a catalyst forming depots on servo valves and gels that can cause valve stiction and mask filter elements. ICB elements do not contribute metals and will remove dissolved metals from airborne ingress and element leaching to < 10ppm.

**NO METALS = NO DEPOSITS / NO GELS**

Acid Production
The primary sources of fluid degradation in phosphate ester are Oxidation (heat) and Hydrolysis (water) which act on phosphate ester to form acids. Dissolved metals from Fuller’s and Selexsorb elements enable the acid creating a autocatalytic effect where air retention increases which accelerates oxidation (more acid).

Acid production rates are directly related to the existing Acid Number (AN or TAN). Acid production at AN > 0.20 is significantly higher than at AN of 0.05. The lowest fluid maintenance costs are achieved when the Acid Number is maintained at < 0.05.
**30 million hours of proven performance**

Solving million dollar EHC problems on the largest fossil fuel plants in The U.S.A, Europe & Asia, and on the largest Gas & Steam turbines in the world.

- Stainless steel ensures compatibility with fluids and adsorbed acids.
- Axial flow design maximizes fluid-media contact time and prevents formation of gels & precipitate.
- Rugged rupture free design for absolute containment exceeds minimum ANSI standard for housing media.
- ICB element technology is the upgrade for all other acid removal media.
- Highest capacity media available 15g me/ft$^3$.
- ICB element removes dissolved metals to EPRI specified Ca, Mg, Fe, Na < 10ppm per element.

**Highest Capacity for Acid Removal**

ICB element technology features the highest capacity to remove and retain acid when compared to other medias.

Maintains AN of < 0.05. AN reduction up to 0.5 AN in 24 hours has been achieved.

**Acid Scavenging Capacity**

<table>
<thead>
<tr>
<th>Material</th>
<th>Capacity me/ft$^3$</th>
</tr>
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<tbody>
<tr>
<td>Hy-Pro EPT ICB-600503</td>
<td>16</td>
</tr>
<tr>
<td>Selexsorb ST718-00-CRN</td>
<td>7</td>
</tr>
<tr>
<td>Fuller's Earth HT718-00-CRN</td>
<td>1</td>
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