High-speed epicyclic gearboxes

High-performance Allen Gears for unmatched reliability and efficiency

- High-accuracy gears with non-contact bearings designed for over 100,000 hours of continuous operation
- Load-sharing epicyclic systems split torque to several paths, reducing load on individual gear elements, thereby reducing size
- Configured in three principal arrangements to allow different ratio, torque transmission, and shaft rotation characteristics
- Power between 0.5 MW and 37 MW, transmitted torques up to 4.35 mNm, and operating at speeds from 20 to 40,000 rpm
- Patented technology that improves efficiency, size, reliability, weight, and cost
- Purpose-built to exacting customer specifications and ISO/AGMA/API standards
- Proven outstanding reliability with highest efficiency

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### Overview
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<table>
<thead>
<tr>
<th>Gas and steam turbine gearboxes for power generation</th>
<th>Vertical epicyclic gearboxes for cooling-water pumps</th>
<th>Hydro turbine gearboxes for power generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Generation-mounted gearboxes</td>
<td>- Gear units designed to suit motor and pump interfaces</td>
<td>- High efficiency of typically 93% translates directly into additional revenue</td>
</tr>
<tr>
<td>- Turbine-mounted gearboxes</td>
<td>- Gearcase can be designed to support weight of drive motor</td>
<td>- Co-axial arrangement reduces overall size</td>
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<td>- Lubrication pump, fuel pump, etc., power take-off (PTO) drives</td>
<td>- Reduced overall package size</td>
<td>- Compact, smaller, and lighter than alternatives; reduces overall system size</td>
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<td>- Starter drive, power take-ins (PTIs)</td>
<td>- Coaxial drive train (motor, gearbox, pump)</td>
<td>- Lower pitch-line velocity produces less noise</td>
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<tr>
<td>- Integrated barring drive gear</td>
<td>- Integrated lubrication systems</td>
<td>- Horizontal and vertical arrangements</td>
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<tr>
<td>- Instrumentation packages for condition monitoring</td>
<td>- Reduced noise and vibration</td>
<td>- Multiple stage solutions for high-ratio speed increasers</td>
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<tr>
<td>- Integrated lubrication systems</td>
<td>- Transfers thrust or accepts external thrust via integral thrust bearing</td>
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</tbody>
</table>

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