



Dresser-Rand's KG2-3G uses Ener-Core's gradual oxidizer to burn a range of low-grade waste gases

material processing. The capability is built on the same Finite Element (FE) framework as Computational Solid Mechanics delivered in v10.04. www.cd-adapco.com

Allison 501K retrofit

Frontline Aerospace has developed IsoCool, a bolt-on compressor retrofit technology for the Rolls-Royce (Allison) 501K that improves heat rate, increases power output and lowers emissions. IsoCool stands for isothermal compression, which is impossible to truly achieve. By removing heat, stage by stage, from the compressor via water cooling the stator vanes and adding heat fins to increase air side surface area, the work required to compress air can be reduced.

By implementing compressor air cooling in this way, reductions in heat rate and increases in shaft power can be achieved by swapping compressor cases and making a few minor system changes. At certain times, the focus can be on lower heat rates (fuel expense), and at others, higher power output depending on the application. According to Frontline, 10% heat rate improvements and 15% power improvements can be achieved along with lower emissions.

The Rolls-Royce 501K family is often used in natural gas pumping (compressor drive), power generation and industrial applications. More than 1,500 of these Allison gas turbines are in service worldwide for land-based applications. Additionally, there are about and 6,000 flying gas turbines (T56) primarily on

C130 Hercules transport aircraft.

The current rating of the 501K, depending on model varies from 4 to 8 MW. Frontline has demonstrated IsoCool for the much smaller Rolls-Royce Model 250 C20B helicopter gas turbine with good performance results. www.frontlineaerospace.com

TurboAerator

The Turbo Aerator KTF 5000 by Kinetic Traction Systems, Inc. (KTSi) offers aeration for industries that require air processing. Unlike conventional compressors with lubricated gearboxes, the Kinetic Turbo Aerator uses a single-shaft coupling the impeller and direct-drive, high-speed permanent magnet motor eliminating oil carryover contaminates in the air-compression process to comply with ISO 8573 and ISO 12500 quality standards.

With only one moving part, the Turbo Aerator combines a direct-drive air-cooled permanent magnet motor, self-diagnostic active magnetic bearings and controls, a high-efficiency impeller and a variable frequency inverter with optimized algorithms for high-speed rotation. www.kinetictraction.com

Power oxidation

Ener-Core has a global licensing agreement with Dresser-Rand (D-R) to develop and market D-R's KG2-3GEF 2MW gas turbine coupled with an Ener-Core's oxidizer (*Turbomachinery International*, Mar/Apr 2014, p. 26). The result is the KG2-3GEF/PO which offers wide fuel spec tolerance, less than 1ppmv NOx, and

is said to accept H₂S and be tolerant to siloxane. Two units are likely to be installed at Pacific Ethanol's plant in Stockton, California.

By replacing a gas turbine's traditional combustor with power oxidation technology, low-quality and previously unusable waste gases that are currently flared into the atmosphere can be converted into heat that can be used to generate low-cost on-site clean power and steam. With its 250 kilowatt power stations already operating in Europe and the U.S., EnerCore's Gradual Oxidation technology provides for base-load power using waste gas. www.ener-core.com

Petrochemical bearings

Morgan Advanced Materials offers axial and radial bearings for applications in the petrochemical industry with severe service conditions. Morgan's bearings are mechanically strong at high temperatures for applications where conventional lubricants are not effective. The bearings have a low wear rate due to construction from carbon, graphite or silicon carbon-based materials. The bearings also feature chemical inertness and dimensional stability. www.morgansealsandbearings.com

Sullair compressors

Sullair, known mostly for rotary screw compressors, has released a line of centrifugal compressors that operate up to 30,000 hp. The company offers two families of centrifugal compressors: the T-series and f-series.

The new T-series compressors come in complete packages, with models ranging from 168 to 2,306 hp producing flows from 553 to 11,772 cfm. f-series compressors are available in both packaged and non-packaged options and are available from single stage up to four stages, offering flow rates up to 118,000 SCFM. Both series offer oil-free air, and a horizontal split design gearbox allowing easy access to all moving parts. www.sullair.com

SKF products

SKF has released three new products: E300V2, IMx-M and @ptitude Analyst.

E300V2 is a magnetic bearing control cabinet that replaces an earlier version. It is a modular system with new features, such as remote monitoring and diagnostics, redundancy of key components, backup UPS and a high-resolution data acquisition system.

The Multilog On-line System IMx-M together with the @ptitude Monitoring Suite software can provide a complete system for initiation of machinery shut-