



# A Closer Look at TPS 2023

## Booth previews to help plan your visit

Aaron Fagan, Senior Editor

**The Houston Turbomachinery & Pump Symposia (TPS) began as a 200-person Turbomachinery Symposium on the campus of Texas A&M University in 1972.** The Pump Symposium was founded in 1984 and joined forces with Turbo to become a combined event in 2011. TPS, still organized by the Turbomachinery Laboratory at Texas A&M University, will gather for the 52nd Turbomachinery and 39th Pump Symposium annual event from September 26–28, at the George R. Brown Convention Center in Houston.

TPS is a vital industry event that offers a forum for the exchange of ideas between rotating equipment engineers and technicians worldwide. For over 50 years, TPS has been known for its impact on turbomachinery, pump, oil & gas, petrochemical, power, aerospace, chemical, and water industries through two pathways: the technical program and the exhibition. Here is a selection of booth previews to help you plan your visit.



**AGMA—Booth 1501**

Power Transmission Engineering and Gear Technology magazines will be exhibiting in the AGMA booth. Stop by and see us to learn more about subscribing, advertising and contributing. Also learn about the value of AGMA membership and participation in our numerous educational, networking and technical events serving the power transmission industry.

**A.W. Chesterton Company—Booth 2647**

For 140 years, Chesterton has been a world leader in helping process industry companies and manufacturers improve the reliability and efficiency of their rotating, stationary, and fluid power equipment platforms.

Chesterton will be showcasing Pump Repair Services at TPS2023. Chesterton’s team of machinists, technicians, engineers, and millwrights provide the best

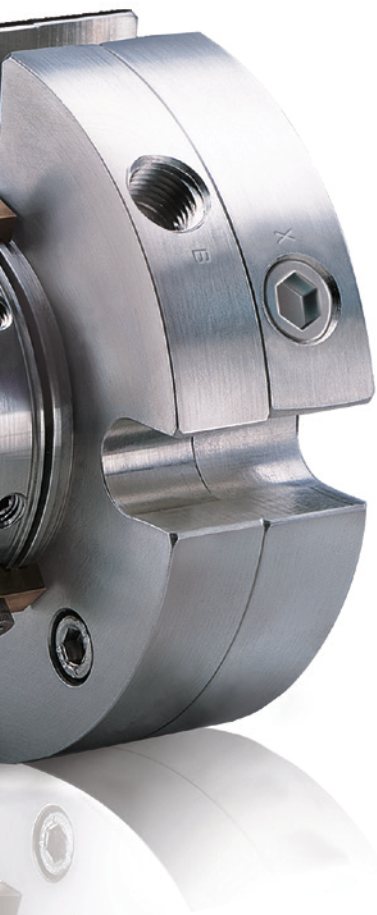
repair and upgrade solutions such as machining, welding and balancing on a wide variety of pumps to increase longevity and performance.

Chesterton will be featuring the 4400 Dual Concentric Gas Seal. Designed for ANSI/API pumps, mixers, compressors, and blowers, The 4400 Gas Seal provides zero fugitive emissions sealing with

minimal barrier gas consumption. Due to the efficiencies of the dual concentric design and the In-Gland Control System, only a fraction of the overall gas consumed is introduced to the process. The remainder of the gas introduced to the seal is transferred to the atmosphere after performing the critical function of face separation.



*Chesterton 442 Split Seal.*



*Chesterton 4400 Dual Concentric Gas Seal.*

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Chesterton 442 Split Seal features a factory split design ideal for equipment that is difficult and time-consuming to disassemble, such as large vertical and horizontal split-case pumps. The seal is assembled without adhesives, allowing for easy installation. The 442 Split Seal can be maintained in the field with low-cost repair kits, which reduce ongoing maintenance costs. The compact design of the 442 Split Seal can be used in a wide variety of equipment and process fluids.

Chesterton DualPac 2212 is a high-performance, non-staining, multipurpose braided packing that requires fewer gland adjustments than traditional packing. The packing's shaft side is made from highly resilient fiber that is burn-resistant and long-lasting, which minimizes shaft scoring. DualPac 2212 can be used in the following applications: ore slurries, mineral handling slurries, dewatering, stock, sludge, slurry and process pumps, agitators, and mixers.



**SpiralTrac Environmental Controller throat bushing.**

The SpiralTrac Environmental Controller is a throat bushing engineered to transform and control the internal stuffing box environment in rotating process equipment to reduce downtime and extend equipment life. SpiralTrac enables particulates to be removed from the stuffing box and away from packing or mechanical seals and permits air to evacuate the stuffing box upon flooding to retain cooling. Heat buildup is minimized in the stuffing box creating circulation around seal faces. SpiralTrac is offered in four configurations: split, adapter, standard, and packing.



**Chesterton Connect Equipment Monitoring System.**

The Chesterton Connect Equipment Monitoring System monitors and analyzes equipment health 24/7. The Connect sensors and gateway automatically collect and transfer the equipment operating conditions in near real-time to the Chesterton Connect Cloud dashboard, simplifying remote monitoring of equipment to help improve operations.

ARC Industrial Coatings provide long-term protection to systems and equipment exposed to erosion, corrosion, and chemical attack. ARC coatings are ceramic-reinforced and abrasion-resistant and can handle 100% solids and high-temperature.

[chesterton.com](http://chesterton.com)

### ABB—Booth 2835

ABB will present key examples of its full range of energy-efficient Baldor-Reliance motors at TPS. ABB products are engineered with industry-proven designs that reach new levels of efficiency under the most demanding conditions.

ABB offers a wide variety of Baldor-Reliance motors to meet specific pumping needs. Repeatable quality in manufacturing and unmatched service makes Baldor-Reliance the most preferred NEMA motors in the industry. The Baldor-Reliance motor showcase will cover a wide offering of explosion-proof and severe-duty motors.

All Baldor-Reliance three-phase motors are designed for inverter duty. The Baldor-Reliance EC Titanium integrated motor/drive is designed for maximum efficiency. These motors are suitable for constant or variable

torque applications while still offering excellent performance across a wind speed load range.



**ABB Baldor-Reliance 841XL.**

ABB delivers a wide offering of explosion-proof and severe-duty motors including the Baldor-Reliance IEE 841XL with a patented positive lubrication system (PLS), extending motor life in harsh environments. The severe-duty lineup also includes the IEE 841XL vertical P-base motor with IP55 sealing and winding insulation, suitable for inverter use, making this motor ideal for harsh pumping applications.

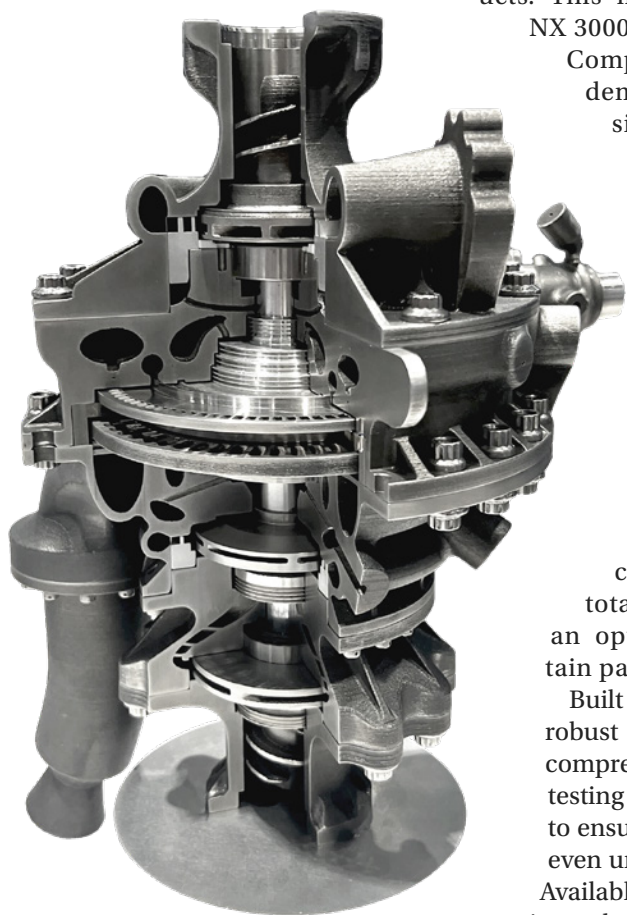
[baldor.com](http://baldor.com)  
[us.abb.com](http://us.abb.com)

### Velo3D—Booth 1419

At this year's TPS Conference, Velo3D will be displaying some new turbomachinery parts, including an entire turbopump that was designed by two students from Colorado University Boulder's Aerospace Engineering Sciences program. The turbopump is more than 95 percent 3D printed—everything except the shaft, spacers, and bolts were 3D printed on a single build using a Sapphire XC. The display is a good example of how metal 3D printing can democratize the design and manufacture of turbomachinery parts, as even two students can have their designs manufactured, finished, and tested.

Sid Raje on the Velo3D team will also be presenting on the functional benefits of additively manufactured turbomachinery impellers. Sid works closely with Velo3D's customers in the turbomachinery industry to help them with the designs and build of

their inducers, impellers, volutes, and other turbomachinery parts. He'll be discussing how 3D printing can help produce more performant designs, streamline supply chains, shorten lead times, and in some cases even lower production costs compared to conventional manufacturing.



*This rocket turbopump was printed in Inconel (IN718), a precipitation-hardenable nickel-based superalloy known for its superb tensile strength when subjected to extreme pressure and heat.*

In addition to the turbopump (pictured), Velo3D's booth will also have a number of turbomachinery parts on display, including a shrouded impeller produced on its Sapphire XC printer, which is capable of printing parts up to 600 mm in diameter.

[velo3d.com](http://velo3d.com)

### **Ingersoll Rand—Booth 2635**

With over 145 years of knowledge and expertise, Ingersoll Rand is a global manufacturer and distributor of unrivaled compressed air

and gas solutions, parts and accessories, and service solutions for a wide range of industries and applications. For decision-makers seeking a robust and energy-efficient compressed air system for oil and gas compression in critical industries, Ingersoll Rand offers a wide portfolio of state-of-the-art products. This includes the new MSG NX 30000 Centrifugal Air & Gas Compressor that meets the demands of energy-intensive sites while making a substantial difference to a business's bottom line, through a range of proven technologies and features. Designed with air separation and industrial gas applications in mind, Ingersoll Rand's MSG NX 30000 centrifugal compressor provides industry-leading efficiency and lower overall total cost of ownership in an optimized, easy-to-maintain package.

Built on a common base with robust components, MSG NX compressors undergo a vigorous testing and validation process to ensure superior performance even under extreme conditions. Available in many configurations, the MSG NX 30000 can be tailored to meet your precise needs. Features like the cost-saving variable inlet guide vanes provide up to nine percent power savings compared to alternative technologies and result in big savings on your energy bill.



*Ingersoll Rand's new MSG NX 30000 centrifugal air and gas compressor.*



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Delivering reliable compressed air and gas to your process goes well beyond the compressor itself. To maximize performance, it is imperative to manage the entire lifecycle of your compression system. In addition to Ingersoll Rand's portfolio of compressed air and gas systems, they offer extensive service programs that allow you to partner with their experts to optimize your total cost of ownership and enhance system reliability. From regular maintenance with OEM-certified parts to remanufacturing aging equipment, Ingersoll Rand provides the industry's most comprehensive resource for advanced aftermarket products and field service.

[ingersollrand.com](http://ingersollrand.com)

### Cincinnati Gearing Systems — Booth 2243

Located in Cincinnati, Ohio, Cincinnati Gearing Systems (CGS) is a recognized leader in precision component gear manufacturing and design engineering. More than just a gear manufacturer, CGS offers customers over 100 years of experience in producing high-quality, reliable, and cost-effective component gearing and gear units for a wide range of power transmission applications. Configurations include epicyclic gear units, multiple pinion gear units, parallel shaft designs, vertical and horizontal offsets, dual and single input, single and double helical, and hybrid designs. CGS has in-house full-service manufacturing, design engineering, testing, and heat-treating capabilities. Whether it is a clean-sheet design or a standard design, CGS is the single source to satisfy your specific gearbox requirements.

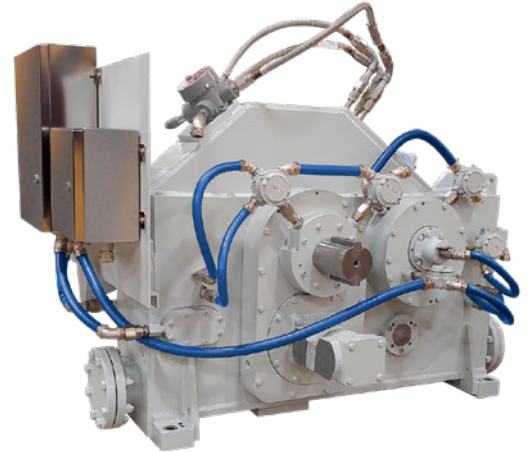
### Fracking Gear Unit

- Gas Turbine to Pump Drive
- Double helical gearing, epicyclic configuration
- 16,000/1,455 rpm @ 5,500 hp
- High efficiency, low noise replacement for traditional diesel engine pumping solutions



### Hydrogen Compression and Expansion Services

- Expander to Generator Drives
- Parallel Shaft Single Helical API 617 Integral Gear Unit
- Expander casing flange mounted to gearbox
- Expander wheel integrally mounted to pinion shaft with Hirth connection
- 33,000/3,000 rpm @ 2,000 hp
- Used in the plastics production process



### Faster Machining Processes

With the installation of the new Liebherr CNC shaper cutter, CGS has significantly reduced the machining time for double-helical gears. This machine doubled previous cutting speeds. The correction measurement in the machine substantially increases the quality of the gear; and due to the electronic helical guide, CGS can shape every helix angle without the need for additional tooling.

The new Kapp Niles gear grinder has automatic onboard checking and the capability to grind internal gears up to a 30-degree helix angle both left hand and right hand.

[cincinnati-gearing.com](http://cincinnati-gearing.com)

