

A Preview of the 2022 Turbomachinery & Pump Symposia

A vital industry event for rotating-equipment engineers and technicians worldwide

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 with Turbo for a singular event in 2011.

TPS is a vital industry event that offers a forum for the exchange of ideas between rotating equipment engineers and technicians worldwide. For nearly 50 years, TPS is 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.

The TPS technical program is hand-selected by advisory committees made up of key industry players, and led by highly respected practitioners and leaders in their

fields. Topics cover maintenance, reliability, troubleshooting, instruction on emerging designs, technology, and best practices that include case studies with real-world relevance on problems solved and lessons learned.

The TPS Exhibit Hall is a forum—composed of nearly 5,000 attendees from close to 50 countries—for exploring innovation and forging new relationships. Visit the booths of more than 350 leading turbomachinery and pump companies that will feature full-size equipment, new technology, and emerging industry trends. Power Transmission Engineering reached out to a select few exhibitors for a preview of what they will be bringing to TPS, September 13–15, at the George R. Brown Convention Center in Houston.

ABB (Booth #2617)

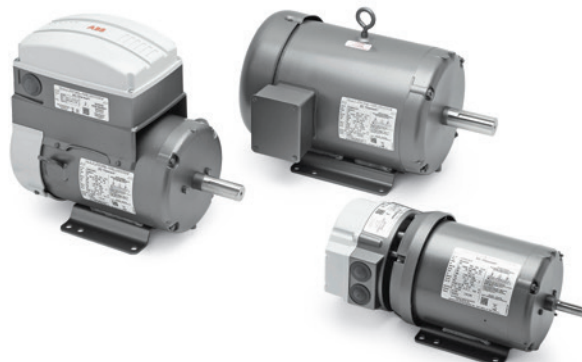
ABB offers a full range of high-performance, energy-efficient motors for the pumping industry. Our products are engineered with industry-proven designs that reach the highest levels of efficiency under the most demanding conditions.

ABB delivers a wide offering of explosion proof and severe duty motors including the Baldor-Reliance IEE 841XL with patented positive lubrication system (PLS), extending motor life in contaminated areas.

The Severe Duty 841XL P-base vertical motor with IP55 sealing and winding insulation, suitable for inverter use, is ideal for harsh pumping applications.

For next-generation efficiency, ABB offers the Baldor-Reliance EC Titanium integrated motor/drive. These motors are suitable for constant or variable torque applications while still offering excellent performance across a wide speed load range.

baldor.com





Altra Motion (Booth #1926)

Ameridrives, along with other well-recognized Altra Motion brands, including Bibby Turboflex and TB Wood’s, provide technically advanced coupling solutions for a range of critical turbomachinery and petrochemical applications. These industry-leading global manufacturers offer a complete line of engineered and standard flexible couplings widely utilized for general purpose, ANSI, API-610 and API-671 turbomachinery driveline connections.



Popular Ameriflex diaphragm couplings, Turboflex Plus, Torsiflex and Form-Flex disc couplings and Amerigear gear couplings provide exceptional reliability and accuracy to help avoid costly downtime and enhance operational efficiency and productivity.



Two leading international flexible coupling manufacturers, Ameridrives International and Bibby Turboflex introduce a new series of high-performance disc couplings designed to meet the stringent requirements of today’s turbomachinery market. The Turboflex Plus combines the proven Turboflex and Ameridisc disc couplings together with the experience of the Ameriflex diaphragm producing a coupling as ideally suited to sensitive high-speed turbo compressors as it is to low-speed load couplings whilst offering an economical solution and being fully compliant API-671/ISO10441 for critical oil and gas, energy, and petrochemical applications.

altramotion.com

Sumitomo Drive Technologies (Booth #2647)

Sumitomo Drive Technologies is pleased to once again exhibit at the Turbomachinery & Pump Symposia. This year, they will showcase their N-series high-speed gear units. These units are optimally designed for every application, with a high and advanced load capacity and cast-iron casing—integrated with the bearing housing.



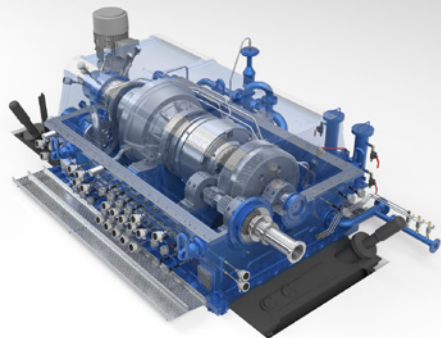
In addition to their large industrial gearbox display, they have invited their product and support sister company—LUFTEX Gears, Manufacturing & Services, to join them. LUFTEX representatives will be available to discuss industrial gearbox repair and support.

us.sumitomodrive.com

Voith (Booth #2703)

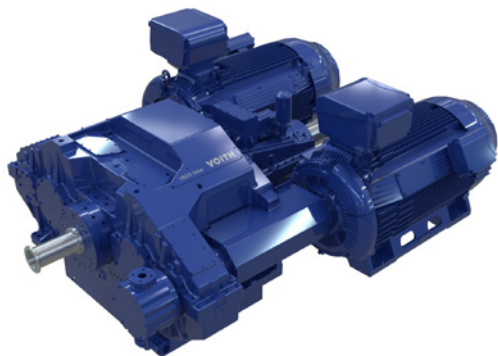
The VoreconNX is located in the driveline, between the drive motor and the driven machine. The input shaft is connected to the planet carrier of the planetary gear. This means that a large proportion of the input power is therefore transmitted to the planetary gear directly, mechanically and almost loss-free.

Additionally, the pump wheel of a hydrodynamic torque converter is coupled to the input shaft and diverts just a small portion of the input power. A liquid flow transmits this power from the pump wheel to the turbine wheel of the torque converter. The diverted power is transmitted to the sun gear of the planetary gear. The power from the planet carrier and from the sun gear is combined in the planetary gear, where ring gear transmits the accumulated power to the output gear stage.



The required specified output speed is achieved by the gear ratio of the parallel shaft gear. Adjustable guide vanes at the pump wheel control the liquid flow in the torque converter and determine the speed of the turbine wheel. This allows the speed of the driven machine to be infinitely adjusted.

The VECO-Drive is the ideal solution for speed regulation of high-speed rotating equipment, achieving a record efficiency of more than 97 %. This is attained by operating an electrical superimposing planetary gear in combination with frequency-controlled servo motors that transmit a small amount of rated power. This saves energy and reduces CO2 emissions. Operators are assured of the lowest possible operating cost through increased efficiency while running rotating equipment in a power range of between 4 and 15 MW.



The VECO-Drive requires 50 % less space and has 30 % less overall footprint when compared to a conventional variable frequency drive. Only a small portion of the rated power is needed as control power which results in less space being occupied by VFD cabinets. The VECO-Drive is perfect wherever space and weight are important, e.g., offshore oil & gas production.

voith.com

Regal Rexnord (Booth #2335)

Regal Rexnord converts power into motion with energy-efficient solutions. The company's flagship Kop-Flex, Euroflex, Thomas and Addax brands of couplings have amassed billions of hours of reliable operation in API 671 and API 610 applications and are well-known throughout the industry for their high quality. The Regal Rexnord combined portfolio of couplings delivers the best value and performance for customers' turbomachinery equipment. Optimized designs pro-

vide reliable, low weight to torque density ratios, for general purpose to highly specialized application criteria. The combined history of Regal Rexnord Disc couplings offers 100+ years of application, operational, and engineering expertise.

These couplings are backed by an expert class of monitoring solutions, making it possible to move from reactive to proactive maintenance using Regal Rexnord's hard-



ware, software and humanware. This includes the Powerlight Torque Monitoring system powered by Perceptiv intelligence for long term trending of torque, power and speed to diagnose the source of performance and efficiency loss. The Perceptiv team has extensive experience with strain gauge methods of measuring torque that can be applied to VFD start-up, turbine power verification or general troubleshooting with motor or turbine driven trains. Regal Rexnord is the only source for a complete package that includes the coupling, torquemeter, data collection and analysis.

In addition, Regal Rexnord offers Coupling Recertification services for Kop-Flex and Rexnord high performance couplings, worldwide. Regal Rexnord couplings are engineered per API 671 and designed to last the lifetime of the connected equipment. However, equipment is often operated beyond its design, reducing the effective service life of the couplings. Recertification resets the damage that couplings accumulate due to severe conditions. Regal Rexnord stands behind its recertification by offering a same-as-new warranty, giving customers the peace of mind of knowing that their recertified coupling will continue to perform for many years.

regalrexnord.com

Cincinnati Gearing Systems Inc. (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 Unit

Gas Turbine to Pump Drive

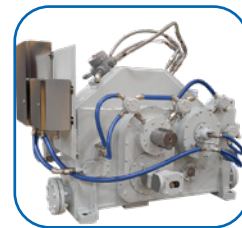
- Double helical gearing, epicyclic configuration
- 16,000/1,455 rpm @ 5,500 hp
- High efficiency, low noise replacement for traditional diesel engine pumping solutions



Expander to Generator Drives

Parallel Shaft Single Helical API 617 Integral Gear Unit

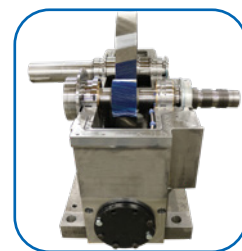
- Expander casing flange mounted to gearbox
- Expander wheel integrally mounted to pinion shaft with hirth connection
- Input speed 33,000 rpm, output speed 3,000 rpm, rated power 1,300 hp
- Used in the plastics production process



Integral Gears

Single Pinion Series

- SP-14 and SP-17 frame sizes
- Pinion speeds to 65,000 rpm
- Powers to 5,000 hp
- Designs to API 617, AGMA 6011
- CGS proprietary thrust bearing arrangement for maximum axial rotor stability, optimum for DGS applications



• Available designs for hydrogen service

cincinnati-gearingsystems.com **PTE**

For Related Articles Search

turbomachinery

at www.powertransmission.com



**KEEP TURBINES
IN MOTION**

Optimized bearing solutions for high speed and intermediate shafts

Integrated bearings for planetary gears

Exponentially longer service life. Significantly lower total operating costs.

Engineered to withstand severe mechanical and environmental stresses, with superior resistance to white-etching phenomena, NSK Tough Steel bearings are field-proven to substantially out-perform and outlast conventional bearing solutions in wind turbine gearboxes.

Nine of the top ten wind turbine manufacturers choose NSK for higher performance, predictable reliability and total cost-efficiency in renewable energy generation. Learn why at NSKAmericas.com/Wind



WWW.NSKAMERICAS.COM