



SEPTEMBER 13-15





THE PREMIER CONFERENCE FOR TURBOMACHINERY & PUMP PROFESSIONALS

FOR THE INDUSTRY, BY THE INDUSTRY





THANK YOU TO EVERYONE

Who Made This Event Possible

Dr. Petersen genuinely thanks every one of the advisory committee members, technical session leaders, exhibitors, staff, and attendees for their efforts toward a successful TPS. We present this year another unparalleled exhibit hall and cutting-edge technical program while fostering an environment of networking and promoting continuous education in turbomachinery and pumps.

ORGANIZED BY





TURBOMACHINERY LABORATORY
TEXAS A&M ENGINEERING EXPERIMENT STATION





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Aisle Signage



Delegate Bags



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Women of TPS Event Sponsor



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Pens



Escalator Runners



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Lanyards



Highlighters



Tuesday Water Station



Wednesday Water Station

WI-FI CONNECTION

- 1. With a Wi-Fi enabled device, find the wireless network named TurboPump.
- 2. Connect to the wireless network name named TurboPump.
- 3. Once connected to the network, open up an Internet Browser.
- 4. You should be automatically redirected to the Splash Page, regardless of what your homepage is set to.
- 5. There is no password required; you should be free to browse the web via your device.
- 6. Press the connect button.

THANK YOU MEDIA PARTNERS































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Power Transmission Engineering





TPS EXTRA



WELCOME ADDRESS

For Whom?

All TPS attendees, including Free Pass.

Tuesday: 8:00 a.m. – 8:35 a.m. Level 3, General Assembly Theater C

WOMEN OF TPS LUNCHEON

For Whom?

All TPS attendees. Registration is required.

Wednesday: 12:00 P.M. – 1:30 P.M.

Room 330

The Women of TPS luncheon is a forum for women of TPS to share experiences and challenges in the industry. It is also an avenue in which those experiences and challenges can be heard and understood by others, including upper management. Both women and men are encouraged to attend. The luncheon is open to all individuals affiliated with the symposium, from technical engineers, to sales and marketing staff, to administrative professionals.

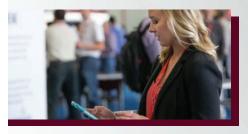


EVENT SPONSORED BY



What's included?

- Discussion and Q&A with female panelists discussing things like productivity in the workplace, leadership, diversity on your team, and more
- Bingo (take home a designer purse or other fun prizes!)
- Plated meal



MOBILE APP

For Whom?

Everyone!

Search for and download our **Turbomachinery & Pump Symposia mobile app** from your favorite app store the week before the event!

Username: Your Registered Email

Password: Reference number in your

confirmation email



MARKETERS MEETUP

For Whom?

TPS symposia and Free Pass delegates.

Thursday: 10:00 A.M.

Turbomachinery Laboratory Booth #2022

Network with your colleagues during the TPS Marketers Meetup.

SOCIAL MEDIA SCAVENGER HUNT

For Whom?

Everyone!

Scattered throughout the TPS exhibit floor are items for our Social Media Scavenger Hunt.

Stop by the Turbo Booth for a scavenger hunt checklist.

Prizes are \$200 Amazon gift cards!

Winners will be announced on Tuesday and Wednesday at 5:30 P.M. on Facebook Live.





SPOUSE PROGRAM

For Whom?

Spouses of symposia delegates

Tuesday: 11:15 A.M.

Meet a Turbo Lab staff outside of room 340A of the George R. Brown Convention center to be escorted-Spouses accompanying registered delegates can register for TPS free of charge and are invited to participate in special spouse events.

Enjoy lunch while watching Chef Ruffy's interactive Cooking Demonstration that includes Jerked Shrimp with Mango Peppercorn Chutney.

TPS EXTRA



INNOVATION PRESENTS

For Whom?

TPS symposia and Free Pass delegates. Innovation Presents, is a platform in the front corner of the exhibit hall where exhibiting companies provide 20-minute commercial presentations. All TPS exhibit hall visitors are invited to attend the presentations.

DINNERS

For Whom?

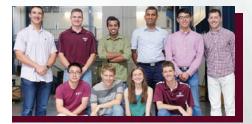
All paid symposium delegates, or those who have purchased meal tickets separately.

The Turbomachinery Laboratory at Texas A&M, TPS organizer, hosts two dinners during the symposia on Tuesday and Wednesday evenings.

Tuesday: Tex-Mex Buffet | 7:30 P.M. – 9 P.M. Level 2, Hilton Ballroom of the Americas A

WEDNESDAY: Banquet Dinner | 7:30 P.M. – 9 P.M. Level 2. Hilton Ballroom of the Americas A





IAR THIR

For Whom? Everyone!

Thursday: 12:15 P.M.

Meet in front of the gift shop of the Hilton where Transportation will be provided.

You know TPS is hosted by the Turbomachinery Lab, but what do you know about the lab itself? Where is it located? How is it equipped? What research projects are in progress? Take a tour of the Lab at Texas A&M University in College Station on the Thursday afternoon following TPS. Add the tour on to any registration option. Please note that space is limited. Lunch and transportation are provided.

HOSPITALITY SHITES

For Whom?

TPS symposia and Free Pass delegates.

The Hospitality Suites are scheduled Tuesday and Wednesday. All Hospitality Suites are located at Hilton Americas-Houston. See the Schedule at a glance for more information.

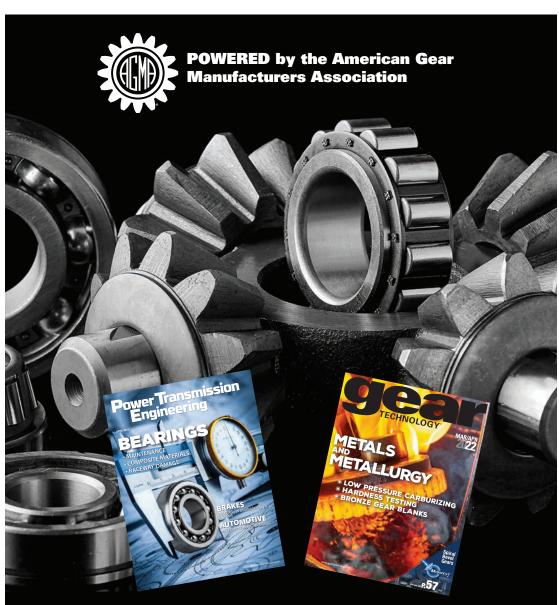


Power Transmission Engineering

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THANK YOU ASSOCIATION & EVENT PARTNERS















EXTENDED SHORT COURSES

The Turbo Lab offers extended short courses throughout the year led by industry experts and academics. Courses range from three to five days and offer working professionals valuable education opportunities in an interactive environment.

MACHINERY VIBRATION & ROTORDYNAMICS | JANUARY 16-20, 2023

DoubleTree by Hilton IAH Hotel

The course is designed to benefit both young engineers and veterans. The course will cover basicvibration theory and how to use it to solve mechanical vibration problems experienced in the field. Rotordynamics terminology in common use will be defined and explained, including critical speeds, critical speed inversion, unbalance response and rotordynamic instability.

CENTRIFUGAL COMPRESSOR OPERATIONS | APRIL 17-20, 2023

Centrifugal Compressor Operations for 21st Century Users (CCOPS) is intended for beginning-and intermediate-level professionals to accelerate their understanding of centrifugal compressors and how they are used in oil & gas applications. The course covers design aspects, aerodynamics, rotordynamics, the practical applications of installation, testing, commissioning and procurement.

ROTORDYNAMICS | APRIL 17-20, 2023

The Rotordynamics short course is for beginning- and intermediate-level engineers in the petroleum, chemical, power and gas industries. It provides a basis for understanding the rotordynamics—the behavior and diagnosis— of turbines, compressors, expanders, motors, pumps and generators and their subcomponents to help select, analyze, troubleshoot and repair them for maximum reliability. The course is packed with case studies and workshops for hands-on evaluation of actual machines.

RECIPROCATING MACHINERY DYNAMICS | APRIL 17–20, 2023

The course is intended for engineers/analysts who work with plant machinery and piping and must make decisions about the reliability and safety of systems experiencing high vibration.

LEARN MORE AT TURBOLAB.TAMU.EDU/SHORT-COURSES-2

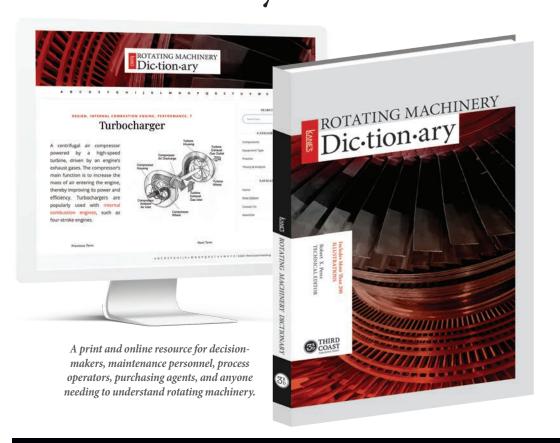
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SEARCH for and **DOWNLOAD** our TURBOMACHINERY & PUMP SYMPOSIA **MOBILE APP** from your favorite app store.



GAS COMPRESSI

ROTATING MACHINERY Dictionary



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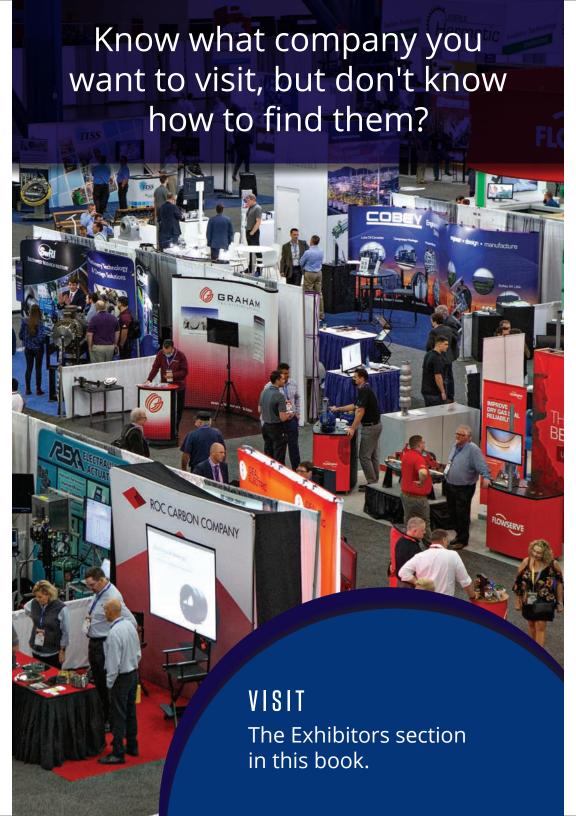
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SCHEDULE

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SCHEDULE AT A GLANCE

SUNDAY, SEPTEMBE	R 11, 2022	
4:30 P.M 6:00 P.M.	Exhibitor Registration	Level 1, Exhibit Hall D
4:30 P.M. – 6:00 P.M.	Delegate Registration	Level 3, Prefunction Area 340/350
4:30 P.M 6:00 P.M.	Leader Registration	Level 3, Room 340A
MONDAY, SEPTEMBE	R 12, 2022	
7:00 A.M. – 12:00 P.M.	Exhibitor Registration	Level 1, Exhibit Hall D
7:00 A.M. – 12:00 P.M.	Delegate Registration	Level 3, Prefunction Area 340/350
7:00 A.M. – 12:00 P.M.	Leader Registration	Level 3, Room 340A
8:30 A.M. – 5:00 P.M.	Short Courses	Level 3
12:00 P.M. – 1:15 P.M.	Short Course Luncheon	Level 3, George Bush Grand Ballroom C
1:30 P.M. – 5:00 P.M.	Exhibitor Registration	Level 1, Exhibit Hall D
1:30 P.M. – 5:00 P.M.	Delegate Registration	Level 3, Prefunction Area 340/350
1:30 P.M. – 5:00 P.M.	Leader Registration	Level 3, Room 340A
5:30 P.M. – 6:00 P.M.	Turbo Advisory Committee Meeting	Level 3, Room 330A
6:00 P.M 6:30 P.M.	Pump Advisory Committee Meeting	Level 3, Room 330A

TUESDAY, SEPTEMBE	ER 13, 2022	
7:00 A.M. – 7:45 A.M.	Leader Breakfast	Level 3, Room 330A
7:30 A.M. – 5:00 P.M.	Exhibitor Registration	Level 1, Exhibit Hall D
7:30 A.M. – 5:00 P.M.	Delegate Registration	Level 3, Prefunction Area 340/350
7:30 A.M. – 5:00 P.M.	Leader Registration	Level 3, Room 340A
8:00 A.M. – 8:35 A.M.	Welcome Address	Level 3, General Assembly Theater C
8:45 A.M. – 12:00 P.M.	Symposia Technical Sessions	Level 3
11:00 A.M. – 12:00 P.M.	Lunch for Exhibitors	Level 1, Exhibit Halls C,D,E
12:00 P.M. – 2:00 P.M.	Lunch & Exhibits Open to Paid Delegates	Level 1, Exhibit Halls C,D,E
1:30 P.M. – 7:00 P.M.	Free Pass Registration	Level 1, Exhibit Hall D
2:00 P.M. – 3:30 P.M.	Symposia Technical Sessions	Level 3
2:30 P.M. – 7:00 P.M.	Exhibits Open Free to Public	Level 1, Exhibit Hall
7:00 P.M. – 10:00 P.M.	Hospitality Suite	Hilton Americas, Room 340AB
7:30 P.M. – 9:00 P.M.	Tex-Mex Buffet (Badges required – Not open to Free Pass)	Hilton Ballroom of the Americas A

SCHEDULE AT A GLANCE

WEDNESDAY, SEPT	EMBER 14, 2022	
7:30 A.M. – 8:15 A.M.	Leader Breakfast	Level 3, Room 330A
8:00 A.M. – 5:00 P.M.	Exhibitor Registration	Level 1, Exhibit Hall D
8:00 A.M. – 5:00 P.M.	Delegate Registration	Level 3, Prefunction Area 340/350
8:00 A.M. – 5:00 P.M.	Leader Registration	Level 3, Room 340A
8:00 A.M. – 5:00 P.M.	Booth Selections for 2023	Level 1, Exhibit Hall D, Exhibitor Registration Counter
8:30 A.M. – 12:00 P.M.	Symposia Technical Sessions	Level 3
11:00 A.M. – 12:00 P.M.	Lunch for Exhibitors	Level 1, Exhibit Halls C,D,E
12:00 P.M. – 2:00 P.M.	Lunch & Exhibits Open to Paid Delegates	Level 1, Exhibit Halls C,D,E
1:30 P.M 6:30 P.M.	Free Pass Registration	Level 1, Exhibit Hall D
2:00 P.M. – 3:30 P.M.	Symposia Technical Sessions	Level 3
2:30 P.M. – 6:30 P.M.	Exhibits Open Free to Public	Level 1, Exhibit Hall
7:30 P.M. – 9:00 P.M.	Banquet (No entry after 7:45 P.M. Badges required – Not open to Free Pass)	Level 2, Hilton Ballroom of the Americas D

THURSDAY, SEPTEM	BER 15, 2022	
7:30 A.M. – 8:15 A.M.	Leader Breakfast	Level 3, Room 330A
8:00 A.M. – 11:00 A.M.	Exhibitor Registration	Level 1, Exhibit Hall D
8:00 A.M. – 11:00 A.M.	Delegate Registration	Level 3, Prefunction Area 340/350
8:00 A.M. – 11:00 A.M.	Leader Registration	Level 3, Room 340A
8:00 A.M. – 11:00 A.M.	Booth Selections for 2023	Level 1, Exhibit Hall D, Exhibitor Registration Counter
8:30 A.M. – 12:00 P.M.	Free Pass Registration	Level 1, Exhibit Hall D
8:30 A.M. – 12:00 P.M.	Symposia Technical Sessions – Case Studies	Level 3
9:30 A.M. – 12:00 P.M.	Exhibits Open Free to Public	Level 1, Exhibit Hall
12:00 P.M. – 2:00 P.M.	Turbo and Pump Advisory Committee Luncheon	Level 3, 330A

HAVE YOU RESERVED YOUR BOOTH FOR TPS 2023?

Visit the Exhibitor Registration Counter in Hall D to book before you leave TPS 2022.

WEDNESDAY, SEPTEMBER 14 8:00 A.M. - 5:00 P.M.

THURSDAY, SEPTEMBER 15 8:00 A.M. - 11:00 A.M.

TPS 2023: **SEPTEMBER 26-28, 2023** SHORT COURSES **SEPTEMBER 25TH**

2 2 B

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HOSPITALITY SUITE SCHEDULE

TUESDAY, SEPTEMBER 13, 2022

7:00 P.M. - 10:00 P.M.

Rotating Machinery Services

340 A/B



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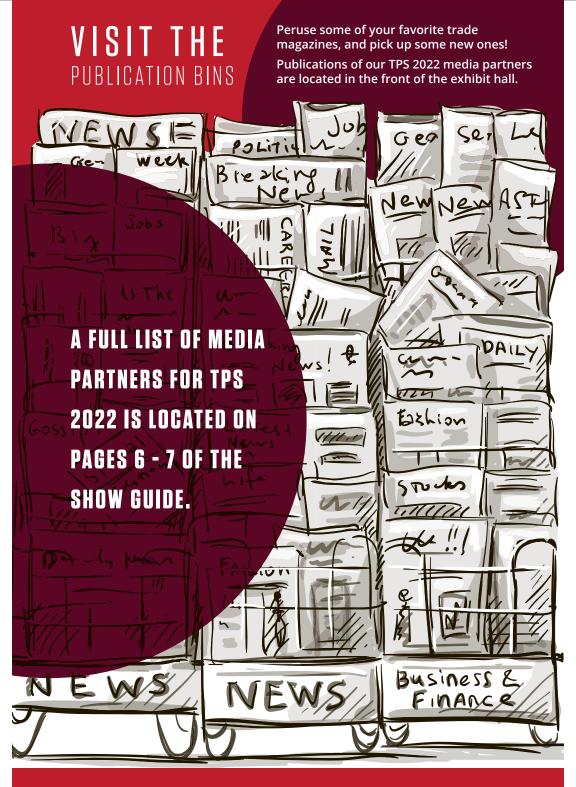




INNOVATION PRESENTS SCHEDULE

Located in the front of Exhibit Hall C Innovation Presents, formerly Turbo Stage, is a platform in the front corner of the exhibit hall (House left, aisle 3300) where exhibiting companies provide 20-minute commercial presentations.

TUESDAY, SEPTEMB	ER 13, 2022	
3:30 P.M. – 3:50 P.M.	Applied Flow Technology – Nick Vastine "Pulsation & Vibration (Flow Induced and Acoustic)"	
4:00 P.M. – 4:20 P.M.	EcoTech – Trent Cameron "Innovative Mag Drive Technology"	
4:30 P.M. – 4:50 P.M.	A.W. Chesterton – Juan Cid "Increasing Pump and Seal Reliability Through Monitoring"	
5:00 P.M. – 5:20 P.M.	John Crane – Volker Hintz "Digitally Enabled Zero-Emissions Seal: Leading the Way Towards a Low-Carbon Footprint"	
5:30 P.M 5:50 P.M.	T.F. Hudgins – Keith Macaluso "Oil Mist"	
WEDNESDAY, SEPTEMBER 14, 2022		
3:30 P.M. – 3:50 P.M.	Burckhardt Compression – Heinz Meier "From Health-Check to Zero Emission"	
4:00 P.M. – 4:20 P.M.	Novity – Nilesh Tralshawala "Critical Asset Predictive Maintenance with Data-Driven and Physics-Based Models"	
4:30 P.M. – 4:50 P.M.	ETU i+D S.A. de C.V. – Oscar De Santiago "Innovations On Seal Gas Systems Reliability Increment"	
5:00 P.M. – 5:20 P.M.	Turbomachinery Laboratory – Greg Gammon "Research, Education, and Workforce Development: The Turbomachinery Laboratory Overview"	



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PROGRAM

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WEDNESDAY LUNCHEON, SEPTEMBER 14 12:00 - 1:30pm • \$50 • Room 330

Visit the registration counters on Level 1 or Level 3 to purchase your ticket.

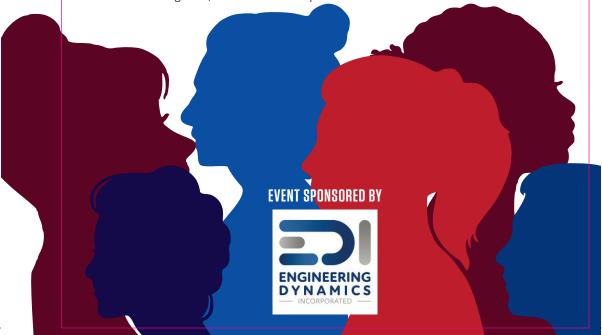
Note that space is limited.

What's Included?

- Discussion and Q&A with four female panelists representing the wide breadth of TPS and the turbomachinery and pump communities
- Bag bingo (take home a designer purse or bag!)
- Plated meal

The Women of TPS luncheon is a forum for women of TPS to share experiences and challenges in the industry. It is also an avenue in which those experiences and challenges can be heard and understood by others, including upper management.

Both women and men are encouraged to attend. The luncheon is open to all individuals affiliated with the symposium, from technical engineers, to sales and marketing staff, to administrative professionals.



PROGRAM SCHEDULE

MONDAY, SEPTEMBER	12, 2022 SHORT COURSES	
8:30 A.M. – 10:00 A.M.	Short Courses	Level 3, Meeting Rooms
10:00 A.M. – 10:30 A.M.	Break	Level 3, Lounge Area
10:30 A.M. – 12:00 P.M.	Short Courses	Level 3, Meeting Rooms
12:00 P.M. – 1:30 P.M.	Short Course Luncheon	Level 3, George Bush Grand Ballroom C
1:15 P.M. – 3:00 P.M.	Short Courses	Level 3, Meeting Rooms
3:00 P.M 3:30 P.M.	Break	Level 3, Lounge Area
3:30 P.M. – 5:00 P.M.	Short Courses	Level 3 Meeting Rooms
5:30 P.M. – 6:00 P.M.	Turbo Advisory Committee Meeting	Level 3, Room 330A
6:00 P.M. – 6:30 P.M.	Pump Advisory Committee Meeting	Level 3, Room 330A

8:00 A.M. – 8:35 A.M	Welcome Address	Level 3, General Assembly Theater C
8:45 A.M. – 10:15 A.M.	Symposia Technical Sessions	Level 3, Meeting Rooms
10:15 A.M. – 10:30 A.M.	Break	Level 3, Lounge Area
10:30 A.M. – 12:00 P.M.	Symposia Technical Session	Level 3, Meeting Rooms
11:00 A.M. – 12:00 P.M.	Lunch for Exhibitors	Level 1, Exhibit Halls C,D,E
12:00 P.M. – 2:00 P.M.	Lunch & Exhibits Open to Paid Delegates	Level 1, Exhibit Hall C,D,E
2:00 P.M. – 3:30 P.M.	Symposia Technical Sessions	Level 3, Meeting Rooms

WEDNESDAY, SEPTEMBER 13, 2022	TECHNICAL SESSIONS DAY 2
-------------------------------	--------------------------

8:30 A.M. – 10:00 A.M.	Symposia Technical Sessions	Level 3, Meeting Rooms
10:00 A.M. – 10:30 A.M.	Break	Level 3, Lounge Area
10:30 A.M. – 12:00 P.M.	Symposia Technical Sessions	Level 3, Meeting Rooms
11:00 A.M. – 12:00 P.M.	Lunch for Exhibitors	Level 1, Exhibit Halls C,D,E
12:00 P.M. – 2:00 P.M.	Lunch & Exhibits Open to Paid Delegates	Level 1, Exhibit Halls C,D,E
2:00 P.M. – 3:30 P.M.	Symposia Technical Sessions	Level 3, Meeting Rooms

THURSDAY, SEPTEMBER 15, 2022 | CASE STUDIES

8:30 A.M. – 10:00 A.M.	Case Studies	Level 3, Meeting Rooms
10:00 A.M. – 10:30 A.M.	Break	Level 3, Lounge Area
10:30 A.M. – 12:30 P.M.	Case Studies	Level 3, Meeting Rooms
12:30 P.M. – 6:30 P.M.	College Station Lab Tour	

A MORE DETAILED SCHEDULE
SEARCH for and DOWNLOAD our
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MOBILE APP from your favorite app store.

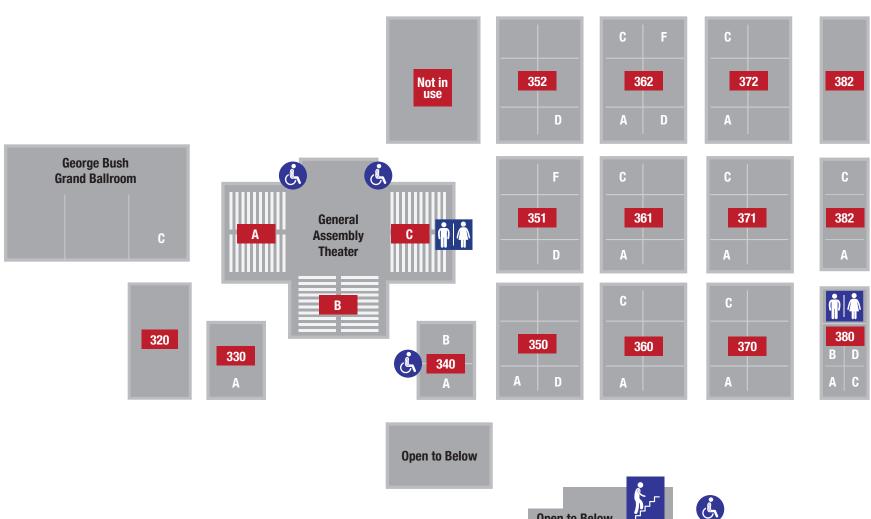
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CONVENTION CENTER

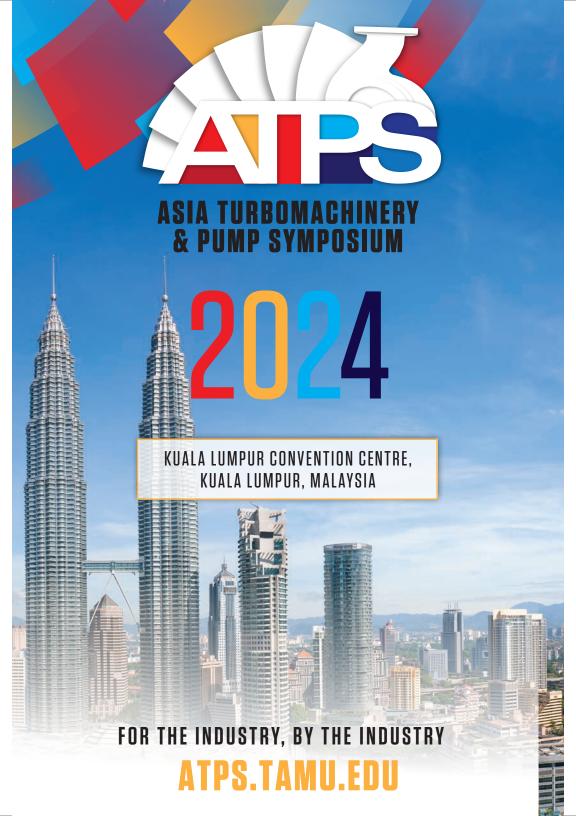
MAP LEVEL3











TURBO Advisory committee

The 51ST Turbomachinery Symposium is sponsored by the Turbomachinery Laboratory of the Texas A&M Engineering Experiment Station, The Texas A&M University System. The Advisory Committee for this symposium is composed of engineers from various user and manufacturing corporations throughout the U.S. and abroad. The presenters of Lectures, Tutorials, Case Studies, and the Discussion Leaders are leaders from the rotating equipment community. The Advisory Committee is greatly indebted to these individuals for their participation and outstanding contributions.

ERIC L. PETERSEN, DIRECTOR
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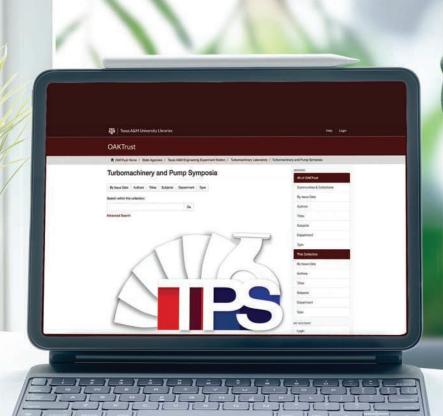
Attend the WELCOME ADDRESS

Tuesday, September 13th 8:00 a.m. – 8:35 a.m. Level 3, General Assembly Theater C

PROCEEDINGS

FROM ALL PREVIOUS SYMPOSIA ARE





PUMP Advisory committee

The 38[™] Pump Users Symposium is sponsored by the Turbomachinery Laboratory of the Texas A&M Engineering Experiment Station, The Texas A&M University System. The Advisory Committee for this symposium is composed of engineers from various user and manufacturing corporations throughout the U.S. and abroad. The presenters of Lectures, Tutorials, Case Studies, and the Discussion Leaders are leaders from the fluid-handling-equipment community. The Advisory Committee is greatly indebted to these individuals for their participation and outstanding contributions.

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Texas A&M University

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HIDEAKI MAEDA

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Mechanical Solutions, Inc.

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TURBO SHORT COURSES

A short course is a full-day training session presented concurrently with other sessions.

SHORT COURSE

Mechanical Seal Fundamentals

Monday, September 12, 2022

INSTRUCTORS

Mike Huebner (Consultant), Steven Bullen (A. W. Chesterton Co.), Brian Kalfrin (John Crane), Christopher Ropp (Flowserve)

DESCRIPTION

Mechanical seals continue to be the most effective and efficient solution for sealing rotating pumps and other fluid handling equipment. Many people in the industry however have little knowledge on how mechanical seals work, how they should be operated, and methods for troubleshooting seals and sealing systems. This knowledge is required to properly select seals, install them, and operate them to achieve maximum performance and reliability. This short course is intended to address the needs for all personnel who interact with mechanical seals such as engineers, users, installers, purchasers, reliability engineers, and other industrial plant functions. The attendees will also be able ask questions and work directly with industry leading engineers from multiple seal manufacturers.

SHORT COURSE

Motor and VFD Principles

Monday, September 12, 2022

INSTRUCTORS

Tim Albers (Nidec US Motors), Jeff Bergman (ABB)

DESCRIPTION

Electric motors are a key driver within a plants rotating machinery applications. Safe and reliable operation, of the electric motor and the components that control them, are key to plant success. With the industry's push for more efficient systems with higher automation, the requirement to use electric motors with VFDs is becoming more popular. This course will educate the participant on the general function, application, installation, maintenance and troubleshooting of the electric motor and VFD as a system. It will also cover the interaction the motor and the VFD have with key turbo machinery applications.

SHORT COURSE

API 610 12th Edition Short Course

Monday, September 12, 2022

INSTRUCTORS

Frank Korkowski (Applied Knowledge Consulting), Roger Jones, Jeremy Cooper (Bechtel)

DESCRIPTION

The course provides an in-depth review of the API 610 12th Edition standard for technical decision makers who deal with pump selection and reliability daily. It is intended for those individuals in the following fields: Project engineering, Reliability Engineering, Rotating Equipment Engineering and Procurement. Other personnel requiring knowledge or a refresher on fundamentals of centrifugal pumps design and operation will find this course also helpful.

SHORT COURSE

Pump Cavitation: Physics, Prediction, Control, Troubleshooting

Monday, September 12, 2022

INSTRUCTORS

Frank Visser, Bruno Schiavello (Flowserve)

DESCRIPTION

This short course gives insight into roto-dynamic pump cavitation and provides deeper understanding of particulars like cavitation inception, three-percent head drop, 40,000 hours life criterion, cavitation damage potential, NPSHR scaling laws, the effect of dissolved gas, and thermodynamic effect for hot water and hydrocarbons. Empirical correlations for predicting various types of NPSHR and the use of CFD will be discussed. and suction specific speed will be critically reviewed, along with criteria for NPSHA margin. Furthermore, the effect of fluid transients and viscosity will be addressed. Cavitation damage potential will be fully explained by the Cavitation Modes Map, which reflects fundamental insight gained since the 1940s; here in particular the striking departure in shape from the NPSH3 curve for part flows is highlighted, being a key reason of many cavitation pump problems. Attention is further devoted to Impeller Life Expectancy and Cavitation Control with modern designs tools. In conclusion, four field case studies will demonstrate the use of cavitation failure analysis and solution strategy.

SHORT COURSE

Waterhammer: Predicting pressures & pipe forces, mitigation options and understanding Surge in Pumping Systems

Monday, September 12, 2022

INSTRUCTORS

Trey Walters (Applied Flow Technology), Amy Marroquin, Frank Smith (BLACOH)

DESCRIPTION

Waterhammer, also known as "Surge" or "Transients" can be a challenging problem to address in system design. The intricacies of waterhammer from the behavior itself to the damage it causes all the way to suppressing it, are both intriguing but also quite often overwhelming. This is especially true when learning of waterhammer in brief sessions. This course will take the time necessary to provide not only an overview of waterhammer but a deeper dive into its intricacies. Topics that will be covered include incidents and accidents due to waterhammer. historical background, current codes, standards and guidelines, the physics and behavior of waterhammer, the effect of various types of equipment such as motors, pumps, check valves, vessels, control valves, air vacuum valves, etc., current methods, tools and processes for analyzing and measuring waterhammer and finally methods and considerations for suppression. Participants will leave the course with a more firm understanding of waterhammer and numerous contacts and references for future use.

TURBO SHORT COURSES

SHORT COURSE

Vibration Problems and Solutions in Pumps and Turbomachinery

Monday, September 12, 2022

INSTRUCTORS

William Marscher, Eric Olson, Maki Onari, Paul Boyadjis (Mechanical Solutions, Inc.)

DESCRIPTION

This course presents analysis and testing methods for pumps and turbomachinery. Focus is on centrifugal pumps of all types, centrifugal compressors, axial compressors, fans, steam turbines and gas turbines. Rotordynamics and bladed disk vibration are included as modules as well as discussion of fluid-induced vibration (e.g. rotating stall and blade pass frequencies), acoustics, and mechanically induced vibration (imbalance misalignment, rubs, looseness). Troubleshooting methods and fixes are discussed with many detailed case histories

SHORT COURSE

Centrifugal Compressors (CC) 101

Monday, September 12, 2022

INSTRUCTORS

Mark Kuzdal (Dresser-Rand), Jay Koch (Siemens)

DESCRIPTION

This course is aimed at engineers and technical professionals who need a broad-based introduction to centrifugal compressor design and analysis. This course starts with the basics and builds to provide a full understanding of a centrifugal compressor. The course will include the following topics: reciprocating, axial and centrifugal compressor

similarities/differences; centrifugal compressor configurations; design consideration; and balancing aerodynamic, rotordynamic and mechanical consideration. The course will answer the question "How do they work?" Factory testing, and future challenges. At the completion of the course, the attendees will hold a strong understanding of basic concepts. This knowledge will act as a springboard to further growth understanding of more complex centrifugal compressor concepts. An emphasis is placed on providing practical informa tion with minimal theory. This is NOT a centrifugal compressor operations and maintenance class.

SHORT COURSE

Centrifugal Compressors (CC) 201

Monday, September 12, 2022

INSTRUCTORS

Jeff Moore (SWRI), James Sorokes (Siemens), Rainer Kurz (Solar Turbines Inc), Jay Koch (Siemens), James Hardin (Elliott Group)

DESCRIPTION

This course supplements the Centrifugal Compressor 101 course by covering in greater detail four key areas related to compressors: aerodynamics, rotordynamics, performance and mechanical testing, and surge control. It is intended for those who attended the 101 course and wish to learn more about these topics. The course is also structured for those practicing rotating machinery engineers who have a basic understanding of the topics covered in CC101 but wish to further their understanding in these key areas.

SHORT COURSE

Babbitted Bearing Operation & Diagnosis

Monday, September 12, 2022 INSTRUCTORS

John Whalen (Consultant), Joy Brinkerhoff Patten (Solar Turbines), Elona Rista (Solar Turbines)

DESCRIPTION

This course is intended for engineers and technicians working with critical rotating equipment. The course will also benefit managers and supervisors that have some rotating equipment responsibility. While most of the material is introductory, it will provide a refresher and perhaps some new information for the more experienced engineers. Those attending will learn about the fundamentals of hydrodynamic lubrication and how that is utilized with journal and thrust bearings in industrial and power generation turbomachinery. An introduction to oil analysis and API 670 instrumentation will be followed by rudimentary evaluation of data from these systems to understand the condition of bearings in operation.

SHORT COURSE

Lateral Rotordyanmics of Petrochemical Equipment - Review, Examples and Problems

Monday, September 12, 2022

INSTRUCTORS

John Kocur (Exxonmobil), Hunter Cloud (BRG Machinery Consulting)

DESCRIPTION

This short course, recently updated with several new case studies, will present the basics of rotordynamics and its application to turbomachinery. Shaft stiffness considerations, tilting pad journal bearing influence on stiffness and damping coefficients, influence of support stiffness and labyrinth and honeycomb seal impact on stability are some of the concepts covered. Basic rotordynamic analyses; undamped critical speeds, response to unbalance and rotor stability will be presented and their use in understanding the rotor behavior explained. Case studies showing problem solving using rotordynamic analysis are a key feature. The student should come away from the course with an appreciation for rotordynamic behavior, an ability to interpret rotordynamic predictions and an awareness of when this tool should be applied to ensure operability and reliability of equipment.

TURBO SHORT COURSES

SHORT COURSE

Advanced Steam Turbine

Monday, September 12, 2022

INSTRUCTORS

Klaus Brun (SWRI), Arun Kumar (HPCL – Mittal Energy Ltd, India), Brian Pettinato (Elliott Group), Adam Neil, Steve Rashid, Derrick Bauer

DESCRIPTION

For a typical centrifugal compressor, The class will provide the attendee with an overview of advanced steam turbine design, applications, operation, and maintenance topics. The topics will also cover advanced turbine design practices to optimize steam supply efficiency and how to maintain equipment reliability. The class will cover areas related to the interactions between the multiple critical components of a steam turbine and how to ensure long term operability. The course is intended and structured for those who already have a basic understanding of rotating machinery and wish to further their understanding in key steam turbine technology areas with a primary focus on oil & gas applications.

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All Cert Training, Inc. offers a variety of diverse training and assessment programs to prepare and certify employees for their respective careers. Customized training programs allow students to create a personalized education tailor-made to their needs. With NCCER affiliation, ACT provides nationally acclaimed safety training services. Specialized certification programs for crane, rigging, and signal persons provides multi-level knowledge-based and hands-on learning opportunities. All Cert Training is a resource for students and employers seeking to assure safety in the workplace and create a well-trained workforce.

ALLOY COATING SUPPLY

1406

1219 Wunsche Loop Spring, TX 77373 USA PH: 281-528-0980 www.alloycoatingsupply.com

Distributor of HVOF/Plasma Coating & Surface Prep Equipment, along with Superabrasives and Masking Products.

ALPHA LASER-US, INC.

2214

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Laser welding/hardening/cladding equipment supplier used in the repair of gas/steam turbines.

ALTA SOLUTIONS INC.

2829

12580 Stowe Drive Poway, CA 92064 USA

PH: 858-668-5200 | FX: 858-746-4184

www.altasol.com

Alta Solutions is an innovative producer of Machinery Protection and Condition Monitoring, Combustion Dynamics, Transient Capture/Diagnostics, and Modal Analysis systems. Alta's products are optimized for monitoring and analyzing a variety of rotating machinery; steam and gas turbines, motors, generators, gearboxes, compressors, pumps, fans, blowers, and structures or piping vibration. With over 900 systems installed worldwide, Alta equipment has field proven reliability for Power Generation, Refining, Chemical Production, Steel and Aluminum Mills, Product Development, Research, and Production QC applications. Innovative features, accuracy, performance, and superior support allow customers to trust Alta Solutions for critical machinery health monitoring, protection, and analysis.

ALTRA INDUSTRIAL MOTION

1802 Pittsburgh Ave. Erie, PA 16502 USA

PH: 814-480-5000 | FX: 814-453-5891

www.altramotion.com





Industrial Motion

2713

Ameridrives, along with other well-recognized Altra Motion brands, including Bibby Turboflex, TB Wood's and Lamiflex, 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.

AMERICAN HOFMANN CORPORATION

3700 Cohen Place Lynchburg, VA 24501 USA

PH: 434-522-0300 | FX: 434-846-1340

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Global Customer base, our facilities in Germany and The United States provide a wide range of horizontal and vertical balancing systems, Moment Scales, Integrated Milling Systems for automatic unbalance mass removal on various types shafts, turbine components and more.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) 2417

11757 Katy Freeway Houston, TX 77057 USA PH: 212-591-8646 event.asme.org/Turbo-Expo

Participating in an ASME organized conference or exposition is a crucial part of a career within the global turbomachinery community. Since 1956 ASME IGTI has been an important resource for the turbine community, hosting a prestigious annual conference and exposition, ASME Turbo Expo. With more than 60 years of experience, ASME offers the best conferences and expositions focused on turbines and turbine professionals. Visit us at www.turboexpo.org.

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APPLIED FLOW TECHNOLOGY

142N

2955 Professional Place Colorado Springs, CO 80904 USA PH: 719-686-1000 www.aft.com

Founded in 1993, Applied Flow Technology has grown to be a leader in the pipe flow modeling software market. With a primary focus on developing high quality fluid flow analysis software, AFT has a comprehensive line of products for the analysis and design of piping and ducting systems. With channel partners around the world and customers in more than 70 countries, AFT software has helped companies in many industries design safer, more efficient systems and solve operational problems.

ARIEL CORPORATION

2505

35 Blackjack Road Mount Vernon, OH 43050 USA PH: 740-397-0311

www.arielcorp.com





Ariel is the largest manufacturer of reciprocating gas compressors in the world. Since 1966 Ariel's application-based engineering is designed to help our customers plan for the future and growth utilizing natural gas across the globe. Ariel has made a commitment with state-of-the art technology in our manufacturing facilities, providing training to our employees and industry technicians, and, maintaining our reputation of safe, rugged, long-lasting equipment to meet demands. Ariel compressors are designed, manufactured, and packaged to exceed expectations. We lead the world in the development of modern compression technology with non-cooled cylinders, high-speed, driver-rated design and market-driven innovation.

ARKOS FIELD SERVICES. LP

17**4**1

19750 FM 362, Suite 100 Waller, TX 77484 USA PH: 832-783-5400 https://www.arkos.com

Arkos Field Services is an industry leader in the aftermarket services business regardless of the specific oil and gas market. We have a safetyminded culture of service technicians who hold an exemplary safety rating and industry leading quality performance ranking. Arkos simplifies and optimizes maintenance for surface facilities by providing comprehensive aftermarket solutions throughout our domestic and international operating areas.

ARTEC MACHINE SYSTEMS

1828

26 Commerce Drive North Branford, CT 06471 USA PH: 203-484-2002 www.artec-machine.com

For the Past 45 years, Artec Machine Systems has been actively engaged in the field of High Speed Gearing Technology. Their capabilities include: technical field support, engineering services and design as well as in-house repair, training and testing. Artec Engineering staff supports their extensive customer base with a full range of solutions making Artec a globally recognized company with a reputation for expertise in power transmission engineering and manufacturing support. In addition Artec is proud to be the exclusive agent in North America for sales and service for the following industry leaders: RENK-MAAG GmbH, RENK AG Industrial Gear Systems and Kissling AG.

ATLANTIC GROUP, INC.

1228

16830 Barker Springs Road, Suite 405 Houston, TX 77084 USA PH: 281-578-0366 | FX: 281-578-0368 www.agivalves.com

Atlantic Group, Inc. provides complete sales, service, parts and technical support for your Pump Protection requirements. Cost effective low flow solutions include: Automatic Recirculation Valves that protect centrifugal pumps from damages that may occur during low flow operations. Back Pressure Regulators that are designed to maintain upstream pressure to minimize/prevent cavitation and flashing in piping systems with varying flow rates. Throttles and Restrictive Orifices are designed to reduce flow and pressure in piping systems. When you have requirements for Automatic Recirculation Valves, Back Pressure Regulators, Throttles and Restrictive Orifices – please contact: info@agivalves.com.

ATLAS COPCO GAS AND PROCESS

1634

Schlehenweg 15 Cologne 50999 GERMANY PH: +4922369650750 www.atlascopco-gap.com

Atlas Copco Gas and Process is a division within the Atlas Copco Group's Compressor Technique business area. It designs, develops, manufactures and maintains turbo compressors, positive displacement compressors, and expansion turbines. In addition, Gas and Process offers a matching range of aftermarket products. The Division's solutions are used in oil and gas and chemical/petrochemical processes, power generation, renewables, and the industrial-gases sector. The divisional headquarters is located in Cologne, Germany, and the production centers are in the United States, China, and India.

AXIS MECHANICAL GROUP

1851

2742

5916 E. Sam Houston Pkwy. S. Houston, TX 77034 USA PH: 713-540-9688 www.axismechgrp.com

Axis Mechanical Group is a millwright company providing turnkey solutions for installation, maintenance, repair, overhaul, or upgrade of industrial rotating and reciprocating equipment for the petrochemical industry.

B

BABBITTING SERVICE, INC. (BSI)



1617 Louise Dr. South Elgin, IL 60177 USA PH: 847-841-8008 www.babbitting.com

Babbitting Service, Inc (BSI) is a hydrodynamic fluid film babbitt bearing manufacturing company. BSI will produce parts with high quality, confidence, and dedication to your specifications and requirements. BSI also offers engineered bearing solutions for all your bearing needs. Our customers range from OEM's, End Users to Aftermarket support companies. In addition to bearings, we make and supply Oil deflectors, bearing seals, Brush seals, packing casings and other related rotating machinery components. Our world class quality and manufacturing facility makes BSI a logical choice as your key supplier.

BECHT 2701

22 Church St. Liberty Corner, NJ 07938 USA PH: 708-214-3343 www.becht.com

Becht is a service-oriented engineering consulting firm that is focused on providing technically excellent engineering services and innovative, sustainable solutions for clients world-wide. We are the "go-to" firm that clients approach when the job needs to be done right – the first time. The Becht Team comprises world-class resources that provide unparalleled engineering solutions, project management support, and technically excellent engineered products. Headquartered in New Jersey, Becht has offices throughout the world that allow Becht's experienced and knowledgeable resources to partner and support clients throughout all phases of a project.

BENTLY NEVADA

1631 Bently Parkway South Minden, NV 89423 USA PH: 877-238-8808

www.bakerhughes.com/bently-nevada



2347

1235

Bently Nevada, a Baker Hughes business, offers a plant-wide, holistic suite of machine condition monitoring and protection hardware, software, and services that help you achieve the highest level of asset reliability possible all of which is backed up by our over 60 years of industry-leading expertise and truly global support. Our portfolio of condition monitoring software and associated hardware work seamlessly to provide your teams the realtime data, condition monitoring, and alarm protocols they need to prevent unexpected downtime, accurately monitor vibration and correctly diagnose your equipment's issues.

BK VIBRO AMERICA

1100 Mark Circle Lafayette, LA 70503 USA PH: 355-235-1848 www.bkvibro.com

Brüel & Kjær Vibro is the leading worldwide independent supplier of condition monitoring solutions for rotating machinery. The comprehensive product range comprises vibration sensors (acceleration, velocity and displacement), vibration monitors, handhelds and rack-based plant-wide integrated monitoring solutions.

BOERGER. LLC

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2441

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Boll Filter Corporation is the U.S. subsidiary of the renowned filter manufacturer, BOLL & KIRCH, headquartered in Germany. BOLL has been a market leader in providing liquid and gas filtration products and systems since 1950, with a comprehensive support network strategically positioned around the globe . Filter specialties include simplex, duplex and fully automatic self-cleaning variations. ASME/API/PED compliant, with most geographical certifications possible.

BOULDEN COMPANY

1720

1013 Conshohocken Road, Suite 308 Conshohocken, PA 19428 USA PH: 610-825-1515 | FX: 610-825-5544 www.bouldencompany.com

Boulden Company is committed to helping customers transform the reliability, efficiency, and safety of high-value machinery by upgrading wear components that were originally designed to optimize first-cost. Boulden applies a wide variety of material solutions including DuPont™ Vespel® CR-6100, Metcar® impregnated carbon graphite, US Synthetic Diamond Bearings, and a portfolio of proprietary B-Series composites engineered to address the industry's most challenging applications. For over 30 years, Boulden has helped customers improve machinery performance in North America and across the globe. With the acquisition of Gulf Coast Bearing & Seal in 2021, Boulden offers custom-engineered bearings and sealing solutions for turbomachinery.

BUFFALO PUMPS

2800

50 Bywater Ct Williamsville, NY 14221 USA PH: 716-693-1850 | FX: 716-693-6303 www.buffalopumps.com

All facets of operations, including engineering, manufacturing and sales, are contained under one roof - making Buffalo Pumps a 'single source' supplier for any pump customer. We have overhaul capabilities to reproduce parts that were originally manufactured 40-50 years ago. We have been a key supplier in the refrigeration, paper and lube oil markets for all the major OEMs for over two decades. In addition, our canned pump technology has long been recognized as the most advanced in the industry. Today, we hold ISO 9001-2015 certification as a pump supplier of the highest quality and dependability.

BURCKHARDT COMPRESSION (US) INC.

1741

19750 FM 362 Rd. Waller, TX 77484 USA PH: 281-582-1050

www.burckhardtcompression.com

Since 1844, Burckhardt Compression has been the worldwide market leader for reciprocating compressor systems and the only manufacturer and service provider that covers a full range of reciprocating compressor technologies and services. Its customized compressor systems are used in the gas gathering and processing, gas transport and storage, refinery, chemical, petrochemical as well as in the industrial gas and hydrogen mobility and energy sectors. Burckhardt Compression's leading technology, broad portfolio of compressor components and the full range of services help customers around the world to find the optimized solution for their reciprocating compressor systems.

B-W GRINDING SERVICE INC

2119

5807 Nunn St. Houston, TX 77087 USA PH: 713-641-0888 www.bwgrinding.com

B-W Grinding Service Inc. is a full service manufacturing, coating and grinding facility using state of the art machinery and coating techniques. B-W's highly skilled craftsmen specialize in manufacturing OEM replacement parts, certified master taper gauges, lapping gauges and repair of parts such as gas and steam turbines, pumps, shafts, sleeves, impellers, compressor rods, plungers, etc. B-W has one of the largest (98 inch swing) purpose built OD grinders for turbomachinery in the world with the experience to accomplish customer objectives 24 hours a day 7 days a week.

C

CAMFIL POWER SYSTEMS

1713

3025 Joseph A. Bombardier Quebec, Laval, QC H7P 6C5 CANADA PH: 514-402-4917

www.camfil.com/en/industries/energy-and-power-systems

Camfil Power Systems is a global leader in clean air solutions for turbomachinery. We manufacture high quality filters and auxiliary equipment for gas turbines and turbomachinery equipment used for power generation and oil & gas applications. Our complete solutions include air inlet, exhaust, noise reducing systems and ventilation as well as dampers and diverters; retrofit services, filter upgrade and spare parts. By offering the right solution for your specific environment, we optimize the process, resulting in lower operating costs, improved efficiency and lower environmental impact.

CCC (COMPRESSOR CONTROLS CORPORATION)

1935

4745 121st Street Des Moines, IA 50323 USA PH: 515-270-0857 www.cccglobal.com

CCC (Compressor Controls Corporation) is the leader in Turbomachinery Train Optimization Services for the upstream, midstream, and downstream Oil & Gas industry. Process, controls, safety & technology engineers, and plant managers optimize plant efficiency every day by utilizing CCC's expertise. This expertise is executed in a comprehensive platform of hardware, software, and consulting services that optimize turbomachinery to improve process performance, increase yield, save energy, reduce downtime and enhance plant safety & security.

CELEROS FLOW TECHNOLOGY

143**6**

8800 Westplain Drive Houston, TX 77041 USA PH: 281-978-2542 www.celerosft.com

Celeros Flow Technology acts as a full-lifecycle optimization partner for customers who design, install and maintain the world's critical flow systems. We unite the original equipment manufacture of high-quality pumps, valves, filtration and pipeline access equipment with comprehensive aftersales support. Our brand portfolio includes ClydeUnion Pumps, M&J Valve, Plenty, Copes-Vulcan, Dollinger, Airpel and Vokes – each one a well-respected leader in its field. Our technologies can be deployed as standalone pieces of equipment, or designed and delivered as fully skidded packages. All our flow control solutions are based on cutting-edge technical expertise, backed by in-depth engineering support and exceptional aftermarket service.

CEROBEAR GMBH

1942

Kaiserstr. 100 Herzogenrath 52134 NRW GERMANY PH: (+) 49240795560 | FX: (+) 49240796224 www.cerobear.com

CEROBEAR is a specialized manufacturer of high performance hybrid and all-ceramic bearings with highly customized solutions for the turbo machinery, fluid machinery, oil and gas, aerospace and race car market. Its major product families include hybrid and all-ceramic ball and roller bearings of all types as well as needle and thin section bearings made from high performance ceramics and steels. CEROBEAR's core capabilities include an extensive heritage of hybrid and all-ceramic bearing design, fast and flexible high precision production of steel and ceramic rollers and rings, and a continuous drive for innovation of design, materials, and manufacturing methods.

CFTURBO, INC.

2926

19 Morris Avenue Brooklyn, NY 11205 USA PH: 929-999-7950 | FX: 929-999-7949 www.cfturbo.com

CFturbo, Inc. offers design software, engineering services, and CAE-workflow development for Turbomachinery and related components. Our key product is the conceptual design platform CFturbo® which is a modern, powerful, user-friendly design tool for various types of Turbomachinery. The software is made to design impellers, vaned and vaneless diffusers, volutes and other casings. Today it covers radial and mixed-flow pumps, blowers, compressors and turbines as well as axial fans, pumps, inducers and turbines. Interfaces to all major CAD- and CAE-systems are available. Its batch mode capability easily allows design exploration and optimization together with commercial or open source CFD/FEA-codes.

CHAMPION HI-TECH MFG CO., INC.

1846

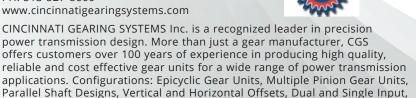
5565 Maudlin Street Houston, TX 77087 USA PH: 713-644-2181 | FX: 713-644-1257 www.chmpgrp.com

Champion Hi-Tech Mfg. Co., Inc. manufactures a complete line of mechanical seals, auxiliary equipment, and gaskets. Champion's strength is their mechanical seals designed for high pressure and temperature applications. These specialty seals are complemented by a full line of mechanical seals used to meet standard applications in operations worldwide. Champion is the champion of innovation and reliability.

CINCINNATI GEARING SYSTEMS

2243

5757 Mariemont Ave. Cincinnati, OH 45227 USA PH: 513-527-8600 www.cincinnatigearingsystems.com



Hybrid Designs, Single & Double Helical, Spur Gears. API 613, API 617

COBEY 1727

1 Ship Canal Parkway Buffalo, NY 14218 USA PH: 716-362-9550 www.cobey.com

Cobey designs and manufactures modular piping packages and auxiliary equipment for the petrochemical, energy, oil & gas, and air separation industries. Engineered products such as lube oil consoles, dry gas seal panels, rundown tanks and rotating equipment packages are custom designed in accordance with customer specifications and applicable ISO/API standards.

COMPRESSOR & TURBINE SERVICES, LLC 2927

901 Old Genoa Red Bluff Road Houston, TX 77034 USA PH: 281-598-1873

www.compressorandturbineservices.com

Compressor and Turbine Services, LLC is a service and repair company in the Houston area that specializes in providing quality rotating equipment repair, engineering services, and customer service to the world's largest corporations. It is our goal to operate with honesty and integrity, and to provide our customers with the best balance of experience, innovation, quality and value.

CONCEPTS NREC 1834

217 Billings Farm Road White River Junction, VT 05001 USA PH: 603-866-9594 www.conceptsnrec.com

For over 65 years Concepts NREC has been a strategic partner to many of the world's leading manufacturers seeking to improve the performance and manufacturability of their turbomachinery components. We help our clients push past the boundaries of what has been done to explore the possibilities of what can be done. Solutions include: • Design audits and scoping studies • Complete original engineering designs • In-house laboratory testing and R&D • Engineering optimization • Computer Aided Engineering (CAE) software • Computer Aided Manufacturing (CAM) software • Prototype and production manufacturing • Proprietary products manufacturing • Reverse engineering • Professional development courses.

CONNECTION TECHNOLOGY CENTER

2803

7939 Rae Blvd Victor, NY 14534 USA PH: 585-261-6631

CTC condition monitoring hardware offers 3 full product lines. Our CTC product line is comprised of accelerometers, ultrasound transducers, signal conditioners and much more. Our PRO proximity probe system product line brings you the most advanced eddy current probe technology. And our TMP product line offers small lightweight sensors for modal analysis, R&D, and much more.

CONTINENTAL CONTROLS

2643

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Leading supplier of complete fuel train and fuel control valves for Gas Turbines. Fuel Controls for 1 MW to 60 MW gas turbines. Liquid, Gas, and Blended gas fuel valves and mixers. CCC also offers a pilot valve configured specifically for DLE configurations. Stop by to see the latest in CCC's fuel train / shut-off valve manifolds.

COOLING TECHNOLOGY INSTITUTE

2928

3845 Cypress Creek Parkway, #420 Houston, TX 77268 USA PH: 281-583-4087 www.cti.org

As a broad based industry association, our mission is to advocate and promote, for the benefit of the public, the use of all environmentally responsible, cooling technologies, such as wet cooling towers, aircooled condensers, dry coolers, indirect cooling, and hybrid systems, by encouraging: Education on these technologies. Development of codes, standards, and guidelines. Development, use, and oversight of independent performance verification and certification programs. Research to improve these technologies. Advocacy and dialog on the benefits of cooling technologies with Government Agencies and other organizations with shared interests. Technical information exchange.

COUPLING CORPORATION OF AMERICA

1434

250 N. Main Street Jacobus, PA 17407 USA PH: 717-428-0570 | FX: 717-428-2865 www.couplingcorp.com

Since 1968, CouplingCorp has provided high-performance flexible couplings for refineries, process plants, and power plants. CouplingCorp also designs and manufacturers the unique Anderson Clamp Hub, which is a keyless interference hub. It can be easily removed and installed without heat or hydraulics. Also, look for the new Vertical Clamp Coupling which can help reduce seal wear on vertical pumps.

CPC PUMPS 1634

5200 Mainway Burlington, ON L7L 5Z1 CANADA PH: 289-288-4776 www.cpcpumps.com

Building on more than 50 years of industry experience and unique design and production capabilities, CPC Pumps International Inc. provides pump solutions for the hydrocarbon industry.

With our broad range of solutions and best-in-class hydraulic performance coverage, CPC Pumps provides our customers with tailor-made pump solutions for process-critical applications. Our focus on serving the market for fully compliant API 610 centrifugal pumps has made us a leading innovator in the hydrocarbon processing industry.

Part of the Atlas Copco Gas and Process Division, CPC Pumps International uses its global sales and service capabilities to provide fast and professional support for our customers' hydrocarbon pump needs.

CRAFT PATTERN & MOLD INC.

1122

60 3rd St South Montrose, MN 55363 USA PH: 763-675-3169 www.craftpattern.com

Craft Pattern is a leader in rapid prototype manufacturing of metal and plastic parts. Craft specializes in quick turn prototype castings, pouring ferrous and non-ferrous metals in their onsite foundries. Craft has recently added its own 3D sand printer an ExOne S-Max to aide in accelerating their lead times from weeks down to days. Craft also has 3, 4 and 5 axis machining capabilities on over 23 CNC's as well as 3 CMM's. Craft Pattern would love to help you with any of your prototyping needs. Craft prides themselves in their commitment to quality craftsmanship and short lead times.

CRYOSTAR 2044

2 rue de l'industrie ZI BP48 Hesingue, Hesingue, 68220 FRANCE PH: 33-038-970-2727 | FX: 33-038-970-2777 www.cryostar.com

Cryostar supplies Turbo-Expanders for natural gas processing, PDH plants, ethylene and fertilizer plants. Particularly robust, reliable and highly efficient, they are built to the latest standards such as API 617. Cryostar provides also Process Pumps and Turbo-Expanders for industrial gas applications, offering increased reliability and product life, operational safety, ease of installation and reduced maintenance costs. Cryostar's wide range of Turbo-Expanders is used for all types of gases, with a choice of brakes adapted to every process (ASU, NLU, and N2 generators). Four Cryostar USA locations: Houston (TX), Whittier (CA), Bethlehem (PA) and Aurora (IL) for sales, after sales, maintenance and production capabilities.

CTS, INC. 1501

4303 South Drive Houston, TX 77053 USA PH: 281-910-5007 www.cts-inc.net

CTS is a thermal spray company that provides coatings for wear and erosion reduction, corrosion protection, thermal barrier and di-electric properties. Coatings include: HVOF (Tungsten Carbide, Chrome Carbide, Stellite), Plasma Spray (Chrome Oxide, Aluminum Oxide, TBC Coatings), and Wire Arc Spray (Stainless Steel, Inconel, Nickel Aluminum). We also offer machining capabilities, ID/OD grinding and shot peening. We are ISO9001 and AS9100 certified.

CUSTOM ENGINEERING COMPANY

2817

2800 McClelland Ave. Erie, PA 16514 USA PH: 814-898-2800 | FX: 814-899-2729 www.customeng.com

Custom Engineering is a fully integrated, ISO certified contract manufacturing and machining company. We specialize in large scale contract fabrication and manufacturing components up to 160,000 lbs. Our facility located in Erie, PA, has over 200,000 square feet of manufacturing space and is ideally suited to produce both short and long run components. Custom is a leading supplier of heavy fabrication, machining, and assembly of large weldments to a wide variety of world-class companies across various industries. Custom specializes in build large baseplates/soleplates. www.customeng.com

D&S ENGINEERED PRODUCTS

2624

1231 County St. Attleboro, MA 02703 USA PH: 508-431-1228 | FX: 508-222-6555 www.d-sep.com

D&S Engineered Products designs and manufactures engineered products such as fluid film (hydrodynamic) journal and thrust bearings, and squeeze film dampers for the industrial, oil and gas, and energy sectors worldwide. We also provide vacuum brazing and hard facing service. All the product are designed and built to suit a particular application. Our engineering staff evaluates each application and offers the best product using our more than 30 years of industry experience. Product is fabricated with quality in our US based, ISO 9001 certified manufacturing facility in a timely and cost-effective manner.

DELTA FLUID SYSTEMS, INC.

1321

358 Dewitt Rd. L8E 2T2 Stoney Creek, ON CANADA PH: 905-664-4333 www.deltafluidsystems.com

Designers and manufacturers of API 682 Mechanical Seal Support Systems (Seal Flush Plans 21/23, 32, 52, 53A, 53B, 54, 55, 65A, 65B, 72, 74, 75, 76) and custom pressure vessels, and API 614 Lube Oil Systems. ASME SECTION VIII DIV 1 / ASME U STAMP certified, ISO 9001:2015 registered.

DICKOW PUMP COMPANY. INC.

1300

1738 Sands Place, #200 Marietta, GA 30067 USA PH: 770-952-7903 www.dickow.com

Dickow Pump Company has manufactured centrifugal pumps for more than 115 years, always with an emphasis on precision, longevity in service and hydraulic efficiency. Today we offer the broadest and most technologically advanced range of magnetic drive seal-less pumps. Dickow Pump Company is a major supplier of pumps for the process industries including the following engineered products. NMB: Close coupled seal-less process pumps. NCR: API 610 PRM: API 685 NMX: Seal-less high temperature pumps especially designed for handling heat transfer fluids with no cooling water required. SCM: Seal-less side channel pumps for low capacities and high differential heads. HZM: Seal-less

DIESEL & GAS TURBINE WORLDWIDE

2134

20855 Watertown Road, Suite 220 Waukesha, WI 53186-1873 USA

PH: 262-754-4100 FX: 262-754-4175

www.dieselgasturbine.com

Diesel & Gas Turbine Worldwide (www.dieselgasturbine.com) is a global website, e-newsletter and twice-a-year magazine covering large reciprocating and rotating engine products and technologies used in land-based and offshore power generation and oil & gas, as well as marine propulsion. The e-newsletter reaches more than 35,000 recipients weekly. COMPRESSORTECH2 magazine is published 10 times a year and covers natural gas and process gas machinery and the compressors, drivers and controls used in offshore and land-based gas compression applications. Diesel Progress is a monthly magazine covering engine-powered technology and applications in the oil & gas, marine propulsion, power generation and other markets.

DRAKE CONTROLS

2541

8731 Fallbrook Drive Houston, TX 77064 USA PH: 713-996-0190 | FX: 713-996-0190 www.drakecontrols.com

Drake Controls is one of Woodward's largest channel partners globally. Our company is a Woodward Recognized Turbine Retrofitter as well as the Authorized Woodward Sales & Service Center for Texas, California, Oklahoma, Kansas, New Mexico & Nevada. In addition to our U.S. operations Drake Controls is also responsible for Woodward products and services within the country of Mexico as well as Brazil with our JV affiliate DrakePM. Drake Controls also represents Dynalco Controls throughout our territories. Our goal at Drake Controls is to provide quality products, solutions and technical services to the Turbomachinery industry and our customers.

E+A 1522

Bachstrasse 10 Möhlin, 4313 Aargau SWITZERLAND PH: 925-685-0227 www.eandausa.com

e+a makes rotors and stators that OEM's use to build motors and generators for embedded high-speed, high-power turbo-machinery applications including: machine tool spindles, micro-turbine generators, waste-water & fuel cell blowers, direct drive gearbox replacements, compressors & turbochargers, chillers, energy storage systems, HVAC compressors, LNG & LH2 pumps, automotive traction motors and range extenders, concrete cutting, aircraft generators & APU's, flywheel energy storage, etc. e+a rotor/stator sets are Induction and Permanent Magnet motors and generators ranging from a few KW at 500K+ RPM through 1.6MW at 25K RPM. e+a offers both Low Voltage (&It;1000V) and Medium Voltage devices (3.3kV, 6.6kV..).

EAGLEBURGMANN INDUSTRIES LP

2427

10035 Brookriver Drive Wolfratshausen 82515 Bayern GERMANY PH: 713-485-7594 www.eagleburgmann.us

Sealing technology by EagleBurgmann is used worldwide in oil and gas industries, refineries, the petrochemical, chemical, and pharmaceutical industries, food processing, energy, water, mining, paper, aerospace, and other industries. Close to 6,000 employees provide their ideas, solutions, and commitment so that customers can rely on our sealing technology. What makes us stand out is our excellent quality, great innovative capacity, and an extensive product portfolio for nearly all industrial processes and fields of application. Our product portfolio includes everything from mechanical seals and seal supply systems to magnetic couplings, carbon floating ring seals, expansion joints, gaskets and packings.

EASTERN ALLOY

2420

1138 Meldon Ave. Donora, PA 15033 USA PH: 724-379-5776 | FX: 724-379-3540 www.easternalloy.com

Eastern Alloy Inc. custom designs and manufactures nitrogen filled shipping and long term storage containers. The protective containers are designed to be stored horizontal and vertical. Equipment shipped and stored include; Rotors, Bundles, Expanders, Gear Sets, Armatures, Couplings, Gear Boxes, Seals, Bearings, Pumps and many other components.

ECOTECH & CP PUMPEN

2919

30466 SGT E. I Boots Thomas Dr. Spanish Fort, AL 36527 USA PH: 251-478-5855 www.eco-technical.com

Industrial Solutions provider specializing in pumps, valves, mechanical seals and automatic lubrication.

ELLIOTT GROUP



901 North Fourth Street leannette, PA 15644 USA PH: 724-527-2811 www.elliott-turbo.com

Elliott Group designs, manufactures, and services compressors, steam turbines, lubrication and seal systems, and cryogenic pumps and expanders for oil & gas, LNG, refining, petrochemicals, and power applications. Elliott's global service network provides installation, maintenance, repair, overhauls, and rerate services for Elliott and non-Elliott equipment. Elliott employs 2500 people in 32 global locations. Elliott Group is a subsidiary of Ebara Corporation, Tokyo, Japan.

EMERSON 2725

835 Innovation Drive Knoxville, TN 37932 USA PH: 865-675-2400 www.emerson.com/ams

Emerson's comprehensive line of condition monitoring technologies help improve reliability in your facility and can contribute to your plant's digital transformation. Technologies include protection plus prediction online system, wireless transmitters, and route-based vibration data collectors/ analyzers. Data is integrated to AMS Machine Works and connects to enterprise platforms for expanded visibility, collaboration, and closed loop reliability for critical assets.

EMORY INDUSTRIAL SERVICES

2751

1423 E Richev Rd Houston, TX 77073 USA PH: 346-339-6980 www.emoryindustrial.com

We are an industrial cleaning company that specializes in Dry ice cleaning.

EMPOWERING PUMPS & EQUIPMENT

2022 800 800

EMPOWERING"

P.O. Box 2313 Tuscaloosa, AL 35403 USA PH: 205-614-8601 www.empoweringpumps.com

Empowering Pumps & Equipment is the information and connection hub for the pump and related equipment industries. The mission is to Connect, Inform, and Educate the industry through publishing The Right Content, To the Right Audience, At the Right Time! As an Empowering Brands property, we aim to be strategic business partners to our clients, creating tailored programs to support our clients' marketing campaigns and providing flexible and responsive service. With broad industry knowledge and a respected brand, Empowering Pumps & Equipment provides publishing opportunities, content development, social media marketing, strategy, and execution options to empower our clients to cost-effectively reach and engage with a diverse audience.

ENERGY CONTROL TECHNOLOGIES, INC.

2941

1134

P.O. Box 681032 Houston, TX 77268 USA PH: 281-309-8164 | FX: 515-223-1638 www.ectpac.com

Energy Control Technologies (ECT) delivers control solutions for turbocompressors, steam turbines, gas turbines, turboexpanders, screw compressors, and reciprocating compressors. Our technology uses Rockwell Automation Allen-Bradley ControlLogix and CompactLogix, Siemens or Honeywell hardware platforms in the Oil & Gas, Industrial/Manufacturing, and Biofuels markets including full duplex and SIL 2 systems. ECT solutions increase energy efficiency and production while improving machine protection. Solutions include: surge control, performance control, quench, loadsharing, steam turbine speed and extraction control, overspeed trip systems, gas turbine fuel control and sequencing, turboexpander control, logic, vibration protection, plant air network control, and simulation services.

ENGINEERING DYNAMICS, INC.

16117 University Oak San Antonio, TX 78249 USA PH: 210-492-9100 | FX: 210-492-9586 www.engdyn.com



ENGINEERING DYNAMICS 1845

Engineering Dynamics Inc. is an independent engineering firm serving industry with the expert technical support to solve and prevent dynamics problems. Founded in 1982, EDI has become a recognized leader in providing engineering expertise in the petrochemical, refinery, power generating & gas processing industries. Wide variety of capabilities & advanced instrumentation.

EQUITY ENGINEERING GROUP, THE

1740

20600 Chagrin Blvd., Suite 1200 Shaker Hts, OH 44122 USA PH: 216-283-9519 www.e2g.com

E2G|The Equity Engineering Group, Inc. develops fixed equipment technologies that keep oil refineries and petrochemical plants safe and operating at top capacity. Our focus is on aging infrastructure service and support – we help clients improve profitability with consulting strategies and software tools that manage risk and control inspection costs throughout the life-cycle of a plant's equipment.

ETHOSENERGY FIELD SERVICE

2525

3444 Pasadena Freeway Pasadena, TX 77581 USA PH: 713-472-3444

ETU I+D SA DE CV

1814

Cuauhtemoc Num 3 San Pedrito Penuelas 76148 MEXICO PH: (+)524422206895 www.etu.mx

We manufacture and repair parts of centrifugal compressors and steam turbines, as well as develop the integral rehabilitation of Turbomachinery, commissioning and monitoring in the field.

EURA INVESTMENT CANADA LTD.

2646

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VFD, HMI, Servo, PLC, motor, drive, control, special pump software and control

F.W. GARTNER THERMAL SPRAYING / CURTISS-WRIGHT

2601

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FW Gartner (a business unit of Curtiss Wright Surface Technologies) is an ISO 9001 (2015) qualified provider of a broad range of surface technologies utilized for the protection and reclamation of critical components, and a fixture in the Houston area since 1923. By combining FW Gartner's Thermal Spray, Laser/PTA cladding, comprehensive machining and grinding shop, full metallographic lab, staff metallurgist and on-site third party QC inspection, FW Gartner is ready to partner with you in delivering the innovative solutions you need and the company's many customers, across a broad range of industries, have come to expect.

FIELD INDUSTRIES

1843

6620 Dixie Dr. Houston, TX 77087 USA PH: 832-736-1839 | FX: 1-888-505-1775 | www.fieldindustries.com





Field Industries improves quality of life by simplifying supply chain. We distribute steel and alloy flanges, fittings, pipe, and long weld necks. Our knowledgeable staff, strategic supply agreements, detailed quality and documentation processes, consolidation capabilities, and in-house logistics result in us providing a quick, competitively priced, and simplified solution tailored to our customers' unique supply chain processes.

FLENDER-GRAFFENSTADEN

2221

115 Technology Drive, A201 Trumbull, CT 06611 USA PH: 203-268-5961 www.flender-graff.com

Flender-Graffenstaden has acquired the know-how and the experience to be a leader in the field of high speed gears. FG Gears are used in all processes in power plants, refineries, offshore and onshore oil and gas installations, petrochemical and industrial process plants. FG provides turbo parallel shafts and integral gear units with centerline distances ranging from 150 to 1500 mm. Designed to meet specific customer needs, our products can reach powers up to 110 MW. With Local support for Application Engineering and Field service support for startup and commissioning through FGGS Corp.

FLEXASEAL ENGINEERED SEALS AND SYSTEMS, LLC

1301

291 Hurricane Lane Williston, VT 05495 USA PH: 802-857-4500 www.flexaseal.com

Flex-A-Seal, Inc. started in December 1983. In 2020, Flex-A-Seal and Momentum Engineered Systems merged creating Flexaseal Engineered Seals and Systems, LLC. Flexaseal has a worldwide presence with sales agents and distributors in over 50 countries. Flexaseal core commitment is to be at the forefront of the industry's technical advances. Our facilities contain state of the art bellows welding capabilities, CNC machining centers, quality control standards, and extensive inventory systems. We also offer seal repair capabilities to refurbish not only our seals, but our competitors' as well. Our mission is to supply our customers with products of the highest quality.

FLEXELEMENT 2316

8889 West Monroe Road Houston, TX 77061 USA PH: 713-910-3839 | FX: 713-910-0223 www.flexelement.com

Since its beginning in 1991, FlexElement has built a reputation for outstanding quality and customer service as experts in the technical design, manufacturing, and repair of power transmission couplings for critical turbomachinery. We are an engineering, manufacturing and service company that provides API 671-compliant high performance power transmission couplings and related services for critical turbomachinery worldwide. FlexElement offers industry-proven flexible disc, dry coupling designs that maximize machine uptime, providing years of maintenance-free service and reliability. Our coupling re-certification program offers timely and cost-effective refurbishment to our couplings as well as other makes of coupling. The refurbishment includes cleaning, visual and dimensional inspection, non-destructive examination, repairs and dynamic balancing in accordance with API 671. At FlexElement, rapid response and superior service are the standard.

FLOWSERVE CORPORATION

1611

2100 Factory St Kalamazoo, MI 49001 USA PH: 269-226-3960 www.flowserve.com

Flowserve Corporation is one of the world's leading providers of fluid motion and control products and services. Operating in more than 55 countries, the company produces a wide variety of engineered and industrial pumps, seals, valves, and specialty equipment. Flowserve also provides a broad range of consultative, engineering and technical support services. Primary markets served include: oil and gas; power generation; chemical; water resources; mining and ore processing; and general industries. More information about Flowserve can be obtained by visiting the company's website at www.flowserve.com.

FUSION, INC.

1600

6911 Fulton Houston, TX 77022 USA PH: 713-691-6547 | FX: 713-699-1003

www.fusionhouston.com

Fusion, Inc. is a coating & grinding facility offering HVOF, plasma and electric twin arc wire coating capabilities and is known for quick-turn repairs on rotating and reciprocating components such as turbine rotors, shafts, piston rods, impellers and crankshafts to name a few. Fusion has also become recognized for the application and finish polishing of carbide on downhole mud motor rotors and drill cones.

G

GAS & AIR SYSTEMS, INC.

2816

1304 Whitaker Street Hellertown, PA 18055 USA PH: 610-838-9625 | FX: 610-838-9650 www.gasair.net

Gas & Air Systems, Inc. (GAS) is the factory authorized compressor packager and distributor of Howden BC (formerly Burton Corblin) Process Gas Compressors in North America. GAS provides application and package engineering, design and fabrication. Packages incorporate Howden BC Process Piston Compressors, Metal Diaphragm Compressors, and Periflow Centrifugal Compressors. In addition, GAS maintains a large inventory of genuine, factory approved spare parts for immediate delivery, and provides qualified Field Service, troubleshooting assistance, reapplication and overhaul service.

GAS COMPRESSION MAGAZINE

2724

15814 Champion Forest Drive, Ste. 409 Houston, TX 77379 USA PH: 832-271-7300 www.gascompressionmagazine.com

Gas Compression Magazine provides in-depth coverage of the products, systems, technologies, and news that affect the global gas compression industry. Upstream, midstream, and downstream, Gas Compression Magazine is your source for gas compression news and information. Published monthly, Gas Compression Magazine is delivered to the people who manufacture, maintain, purchase, package, and teach gas compression products and systems. Offered in print and digital formats, readers can choose their preferred delivery method (or both!). Free to subscribe and free to renew, sign up today at www.gascompressionmagazine.com.

GBS CASTING 1500

777 XiFu Road, XiFu Town, Chengyang District Qingdao RI 266109 Shandong CHINA PH: 401-525-8106 gbscasting.com

GBS casting is THE choice for all of your OEM technical cast and ductile iron parts. We manufacture the highest quality cast and ductile iron parts up to 2.5 tons and in varying quantities. We take complete control of pattern and fixture design and manufacture so we control lead times. We serve the engine, pump, valve, alternator, and printing press industries and will add to that list. ISO 9001, TS 16949.

GEA NORTH AMERICA

2741

3475 Board Road York, PA 17406 USA PH: 717-767-6411 www.gea.com

GEA's proven, world-class process refrigeration and gas compression solutions include screw compressor packages, chiller systems, condensing expertise also extends to disk-stack and decanter centrifuges, as well as gas jet compressor systems. GEA prioritizes value and functionality throughout the lifecycle of its products and service support includes parts as well as predictive & preventive maintenance. Talk with us to learn why industry-leading companies worldwide choose GEA, and how we can meet your process-critical requirements. Booth #1600, GEA – engineering for a better world.

GOODRICH INDUSTRIAL COUPLINGS

2135

104 Otis St. Rome, NY 13441 USA PH: 315-338-3261 | FX: 315-838-1476 www.goodrichcouplings.com

Goodrich Industrial Couplings meet the most demanding industrial gas turbine coupling requirements. Located in Upstate New York, we design, manufacture, and repair diaphragm couplings and components necessary to ensure the highest levels of operation and ensure reduced downtime. Goodrich's power transmission diaphragm couplings have set the standard for quality, reliability and performance in numerous OEM and retrofit applications meeting API-671 requirements.

GRAPHALLOY

1050 Nepperhan Ave. Yonkers, NY 10703 USA PH: 914-968-8400 www.graphalloy.com





GRAPHALLOY, a graphite/metal alloy from Graphite Metallizing Corporation, is a uniform, solid, self-lubricating bushing and bearing material for pumps that permits dry starts, survives frequent loss of suction, reduces vibration and extends pump life for continuous service. GRAPHALLOY's unique nongalling and self-lubricating properties enable a pump to handle fluids and survive upsets that would seize a metal fitted pump. Graphalloy is normally supplied in finished form and can be installed without additional machining. Graphite Metallizing has over 100 years of experience solving the toughest bearing problems. Most of our products are custom designed to unique requirements of the specific application.

GREENE TWEED

2516

1684 South Broad Street Lansdale, PA 19443 USA PH: 215-256-9521 | FX: 215-256-0189 www.gtweed.com

Greene Tweed, a leading global manufacturer of high-performance materials and products, leverages extensive engineering, design, and manufacturing expertise to provide solutions that provide exceptional performance in the challenging environments of the energy market. Combining more than 150 years of technical capabilities and commercial knowledge in a variety of markets, Greene Tweed has been at the forefront of innovation, and is proud to deliver leading products, including Chemraz®, Fusion®, Arlon®, WR®, AR®, and Xycomp®, which are sold worldwide. For additional information, call +1.215.256.9521, or visit our website at www.gtweed.com.

GULF COAST BEARING & SEALING, LLC

1720

8730 Meldrum Lane Houston, TX 77075 USA PH: 832-399-4227 www.bouldencompany.com

Gulf Coast Bearing & Seal ("GCBS") specializes in the design and manufacture of drop-in replacement journal and thrust bearings for compressors, turbines, pumps, and motors. Custom-engineered bearings are designed to reduce bearing temperatures and wear, increase load capacity, and extend bearing life. For centrifugal compressors, GCBS designs and manufactures labyrinth seals-both stationary labyrinths and abradable designs. If you currently have stationary aluminum labyrinth seals, GCBS provides upgrades to composite labyrinth seals which can run with tighter clearances, increasing compressor efficiency and throughput. In a hurry? GCBS repairs bearings and seals on a short lead-time basis.



H & M PLATING COMPANY, INC.

2318

6804 La Paseo Street Houston, TX 77087 USA PH: 713-643-6516 www.hmplating.com

Reconditioning and protective coating processes utilizing electroplated hard chrome, sulfamate nickel, thermal spray, cylindrical (OD & ID) grinding and honing, phosphate coating, welding overlay and media blasting.

HAMMELMANN CORPORATION

1323

436 Southpointe Drive Miamisburg, OH 45342 USA PH: 937-859-8777 | FX: 937-859-9188 www.hammelmann.com

Hammelmann manufactures extremely compact 3, 5 and 7 cylinder pumps for injection service with input capabilities up to 1500HP. The latest variation of this pump series is the Zero Emission Pump where the pumped fluid is hermetically sealed within the pump, preventing leakage to atmosphere during operation. Hammelmann pumps produce maximum performance from a minimal footprint which is the result of combining a compact integral speed reduction gear end with the concept of a vertical configuration. The vertical configuration channels oscillating forces directly downwards into the base structure. Unwanted lateral oscillations as produced by horizontal pumps do not occur.

HANKUK AIRRO

1336

281, Techno 2-ro, Yuseong-gu, Daejeon 34026 281, Techno 2-ro, Yuseong SOUTH KOREA PH: (+)8201042018596

HANWHA POWER SYSTEMS

2547

1204, Chanwon-daero, Seongsan-gu Changwon-si 51542 Gyeongsangnam-do SOUTH KOREA PH: 281-599-3377 www.hanwhapowersystems.com

Hanwha Power Systems (HPS) is expanding the business globally, pursuing world-leading technology and commitment to quality and envisioning a top-tier power & energy solution provider. Over the past 25 years, HPS has delivered more than 6,000 units of turbo compressors worldwide. Based in South Korea, we have overseas offices in China, Italy, Russia, UAE, Vietnam and USA. Our product offerings are mainly turbo compressors and power generation solution, including the supercritical CO2 power system.

HAYWARD TYLER

1114

480 Roosevelt Highway Colchester, VT 05446 USA PH: 802-655-4444 www.haywardtyler.com

Hayward Tyler is a small business established in 1976 and located in Colchester, VT. We are a full service manufacturing company specializing in engineered pump and motor solutions for ASME and other specialist code applications worldwide. We offer a wide range of engineering and manufacturing capabilities to provide OEM and reverse engineered products.

HEBEI METALS & MINERALS CORP. LTD

1034

NO.448 West Hepingroad Shijiazhuang 50071 Hebei CHINA PH: (+)8631187051240 | FX: (+)8631187049231 www.hebcasting.com

Established in 1974, Hebei Metals & Minerals has nearly 50years experience in manufacturing casting and machining products for pumps and valves used for irrigation, minning, marrine, chemical industry,etc. The material of our products can be grey iron, ductile iron, carbon steel, stainless steel, duplex steel, aluminum. Please don't hesitate to contact us. Our high quality products and on time delivery will benefit your supply chain a lot!

HENDERSON ENGINEERING CO., INC.

2906

95 N. Main St. Sandwich, IL 60548 USA PH: 815-786-9471 www.saharahenderson.com

Sahara Air Products, a Division of Henderson Engineering Co., Inc., founded in 1957 by Joe Henderson, provides engineered solutions for air system problems. We thoroughly examine the unique requirements of each customer and develop the most economical and reliable system solution for that application. As the third generation of Hendersons continue the tradition of product excellence and customer service, the heart of the company has always been engineering; finding novel solutions to our customers' unique applications. Henderson has the expertise to review your plant air system and design the optimum engineered solution.

HENKEL LOCTITE CORPORATION

1116

One Henkel Way Rocky Hill, CT 06067 USA PH: 860-571-5100 www.na.henkel-adhesives.com

Loctite technologies can be used in all stages of pump maintenance to prevent common failures, both major and minor, allow for the recycling of parts to avoid scrap replacement costs, assist in disassembly, and help ensure reliability and a consistent running condition. In addition to the trusted Loctite brand products, Henkel also offers maintenance training workshops. These in- plant workshops are hands-on and teach maintenance technicians how to solve the most common maintenance problems and prevent future breakdowns.

HERMETIC PUMPS INC.

1427

18847 Intercontinental Crossing Drive Houston, TX 77033 USA PH: 281-443-0905 | FX: 281-443-0960 www.hermetic-pumpen.com/en

Hermetic Pumps, Inc. is a world leader in sealless pumps including canned motor, magnetic drive, liquid ring vacuum, positive displacement and submersibles. All canned motor pumps offer the electronic monitoring system MAP that checks the rotor position and detects upset conditions. New and standard for all pumps is the rotation protection ROM! Canned motor pumps are available up to 1000 HP, operating pressures up to 18000psig and temperatures from -200F to 850 degrees Fahrenheit. The company is a division of Hermetic Pumpen GmbH Germany.

HILCO 2520

100 W. Fourth Street Elmira, NY 14901 USA PH: 607-733-7121 www.hilliardcorp.com





HILCO, a division of The Hilliard Corporation, has been engineering and manufacturing filtration systems for Turbo-Machinery Equipment since 1925. HILCO filtration cartridges have superior dirt holding capacity and have continually out performed its competitor's cartridges. Some of the company's systems include Oil Mist Eliminators with an efficiency rating of 99.97% at .03 micron, Lube Oil Conditioners, Duplex/Simplex Filters, Transfer Valves with zero leak pads, Process Equipment, Patented Dry Resin Ion Exchange, Varnish Prevention/Removal equipment as well as Engine Starting systems. HILCO welcomes your most challenging filtration needs.

HOERBIGER COMPRESSION TECHNOLOGY

2211

3350 Gateway Drive Pompano Beach, FL 33069 USA PH: 954-974-5700 | FX: 954-974-0964 www.hoerbiger.com

HOERBIGER Compression Technology provides a wide range of reciprocating and rotating equipment services to the refining, chemical, gas transmission, power generation and steel industries. Services from its La Porte, Texas campus, reciprocating and centrifugal compressors. HOERBIGER manufactures compressor components at its plants in Pompano Beach FL setting the standards with products using the latest technology offering reliability and efficiency.

HOOSIER PATTERN INC

1226

906 N. 10th Street Decatur, IN 46733 USA PH: 260-706-4144 | FX: 260-724-9433 www.hoosierpattern.com

Known for our quality of workmanship and commitment to "On Time Delivery", HPI has gained recognition as a premier pattern shop. With some of the latest tools in technology HPI is able to provide you with the best quality, pricing and timing. A highly experienced staff will assist your company with "out of the box" concepts for every need. Hoosier encourages constant research for new products and procedures to stay profitable and further capabilities. Additions of 3D sand printers and an FDM/ABS plastic printer truly keep HPI on the cutting edge of technology.

HOUSTON DYNAMIC SERVICE

2035

8150 Lawndale Houston, TX 77012 USA PH: 713-928-6200 | FX: 713-928-2903 www.houstondynamic.com

Houston Dynamic Service, Inc, is a privately held corporation and one of the largest independent facilities in the region. HDS, has been providing service for over 37 years of the repair of rotating equipment. This includes all types and manufacturers of pumps, compressors, blowers, gearboxes, centrifuges and turbines. HDS can also assist with field service. In addition, HDS is the largest independent provider of seal strip for all type of applications. The HDS complex is located in the Houston Ship Channel area and provides services to the petrochemical, refining, power generation, mining and offshore industries.

HOWDEN 1327

900 West Mount Street Connersville, IN 47331 USA PH: 800-557-6687 | FX: 765-827-9317 www.howden.com

Howden is a global leader in mission critical air and gas handling technology. Our team designs, builds, installs and services highly engineered fans, compressors, heat exchangers and turbines. We enable our customers' vital processes while developing world class, durable technology for optimal performance in a safe, sustainable and cost-effective future.

HSI 2807

6136 Frisco Sq Blvd Frisco, TX 75034 USA PH: 704-815-7906 www.hsi.com

HSI offers workforce training and development programs for industrial organizations. With an in-house development team, extensive media library, and state-of-the art technology including 3D animation, we provide a full menu of services: cutting edge eLearning, instructor-led training, training aids, workshops, job task analysis, employee progression, and train-the-trainer programs. HSI focuses on technical training for the equipment you use, including centrifugal pumps, positive displacement pumps, reciprocating positive displacement pumps and more. HSI also provides safety training, including qualified electric worker training to help you meet OSHA requirements.

HYDRAULIC INSTITUTE

1337

300 Interpace Parkway Parsipany, NJ 07054 USA PH: 973-267-9700 | FX: 973-267-9055 www.pumps.org

The Hydraulic Institute serves pump manufacturers, engineering consulting firms, and pump users worldwide by developing and delivering comprehensive industry standards; expanding knowledge by providing education and tools for the effective application, testing, installation, operation, maintenance, and performance optimization of pumps and pumping systems; and by serving as a forum for the exchange of industry information. HI established Pump Systems Matter as its educational annex in providing webinars and courses on the benefits to pump systems optimization and energy efficiency to improve bottom-line savings of enduser companies. For more information on HI, visit www.Pumps.org.

HYDRO INC. 1227

6320 Cunningham Road Chicago, IL 60607 USA PH: 713-937-9001 www.hydroinc.com

HydroTex Dynamics, part of Hydro's worldwide pump service organization, provides engineering solutions and value-added services to improve pump reliability, extend pump life and reduce overall life cycle costs. Hydro works hand-in-hand with pump users to optimize the performance and reliability of their pumping systems by evaluating and understanding root causes of pump degradation or failure and by providing unbiased engineering analysis, quality workmanship, pump performance testing, and responsive field service for improved plant operation. Visit Hydro's website www. hydroinc.com to learn more about our comprehensive pump services.

LOOKING FOR AN ACTIVITY?

Checkout the TPS Extra Events in the Introduction Section.

HYDROCARBON PROCESSING

2048

2 Greenway Plaza, Suite 1020 Houston, TX 77046 USA PH: 713-529-4301 | FX: 713-520-4433 www.hydrocarbonprocessing.com/

Hydrocarbon Processing provides cutting-edge technical and market information for the global refining, petrochemical and gas processing industries. Since 1922, Hydrocarbon Processing's in-depth technical articles, reference materials and data products have been utilized by engineers and management professionals throughout the world. As technological advances drive growth and innovation, Hydrocarbon Processing continues to be a trusted source of insight and analysis into global and regional industry trends and technological developments. For more information, visit HydrocarbonProcessing.com. Gas Processing & LNG covers the latest process technologies, equipment, operations, maintenance, regulations and market and environmental trends. For more information, visit GasProcessingNews.com.

IDEAL ELECTRIC COMPANY

1813

330 E. First Street Mansfield, OH 44902 USA PH: 409-522-3611 www.theidealelectric.com

Since 1903, IDEAL ELECTRIC COMPANY, formerly Hyundai Ideal, has become a globally recognized, leading supplier of high-power, specialty induction, synchronous, wound rotor and permanent magnet electric motors, generators, condensers, switchgear, power systems and controls up to 50 MVA. IDEAL machines are found in every application, are built to the highest specifications and to all standards and environments. Our Genuine IDEAL Re-manufacturing, Parts & Service, along with our heavy manufacturing and large testing capabilities, support our unyielding commitment to quality reflected in every component we supply and proven by thousands of machines operating globally. Protect your investment; always insist on genuine IDEAL.

INGERSOLL RAND

2435

800-A Beaty Street Davidson, NC 28036 USA PH: 704-896-4000 www.IngersollRand.com

Ingersoll Rand is a global leader in compressed air and gas systems specializing in design, manufacture, optimization and asset management. With a specialty in supplying complete system solutions, Ingersoll Rand offers a broad technology portfolio that includes centrifugal, screw and reciprocating compressors. Knowledgeable company experts conduct full site assessments to understand the customer's operating processes and design the most reliable and efficient solution for each application. Drawing on more than a century of industry experience, Ingersoll Rand has a legacy of helping customers be more competitive within their industries – including those in the petrochemical, air separation, LNG, power generation and general manufacturing sectors.

INTERFACE INC.

1419

7418 East Helm Dr Scottsdale, AZ 85260 USA PH: 480-948-5555 www.interfaceforce.com

We design, manufacture, and guarantee the highest performance of sensors including our world class load cells, torque transducers, multi-axis sensors, instrumentation, systems and more. We are the preeminent supplier to global industry leaders in aerospace, automotive, medical, energy, infrastructure, industrial automation, and top test and measurement pros.

ISOMAG CORPORATION

1827

11871 Dunlay Avenue Baton Rouge, LA 70809 USA PH: 225-752-0926 www.isomag.com

Isomag is the technological leader in industrial bearing seal protection. All Isomag bearing seals utilize precision lapped flat face sealing technology to provide a liquid tight seal. By preventing oil contamination, Isomag seals maximize bearing life and improve MTBF. Isomag seals are compact one-piece cartridge designs that are easy to install and will replace most lip seals and labyrinth seals. Seals are available for pump power frames, steam turbines, electric motors, gearboxes, and many other applications. Available in sizes to fit all shaft diameters from 3/4 inch to 13 inch.

ITT INDUSTRIAL PROCESS

2611

240 Fall Street Seneca Falls, NY 13148 USA PH: 315-568-2811 www.gouldspumps.com

ITT Industrial Process (IP) is a dynamic business expanding on a global scale. Headquartered in Seneca Falls, New York, IP offers a portfolio of world-leading brands in industrial pumps, valves and monitoring and control equipment, offshore water treatment systems, and plant optimization and efficiency systems, as well as aftermarket services and parts.

ITW 2825

30 Endicott Street Danvers, MA 01923 USA PH: 978-777-1100 www.itwperformancepolymers.com

ITW Performance Polymers offers the renowned Chockfast grouting and chocking compounds. The pumpable Chockfast epoxy grout foundation systems and chocking compounds enhance rotating equipment reliability and improve mean time before failure. Chockfast solutions ensure precise and permanent alignment of all machinery and have an unmatched reputation for reliability with major gas pipelines, chemical, petrochemical and refining complexes, mining operations, and industrial construction operations worldwide.

JOHN CRANE

1835

3200 Wilcrest, Suite 325 Houston, TX 77042 USA PH: 214-608-2320 www.johncrane.com

With more than 5,800 employees around the globe, John Crane supplies and services the products used by process industries for mission-critical operations. Founded more than 100 years ago, we are a global leader in rotating equipment solutions, supplying engineered technologies and services to the Oil & Gas, Power Generation and Chemical industries. Our outstanding reputation for designing and engineering high-quality, durable, customized solutions is globally recognized. We partner with our customers and help them meet the latest environmental standards and keep their operations safe and controlled. Headquartered in Chicago, Illinois, we are part of Smiths Group Plc.

KAYDON RING & SEAL, INC.

2143

20 Industrial Dr. Hanover, PA 17331 USA PH: 717-633-4300 www.kaydonringandseal.com

Kaydon Ring & Seal manufactures main shaft seals for centrifugal and oil free screw compressors in hydrocarbon gas applications. The product line includes low leakage Mechanical Oil Seals, dry running Multi-Ring Circumferential seals, Dry Gas Seals, and Circumferential Barrier Seals. We are your lifecycle partner – optimizing initial seal selections and configurations, improving reliability of existing installations, and supporting service and repair needs over the life of your machinery installation.

KELM ENGINEERING, LLC

1618

13711 Banks View Ct. Houston, TX 77059 USA PH: 281-993-3717 www.kelmengineering.com

Kelm Engineering was formed in 1999. Its approach to solving equipment problems is to use a mixture of analytical modeling and field and/or shop testing to validate computer simulations and verify the effectiveness of solutions. Although the company is based in the Greater Houston area, Kelm's projects continue to be located around the nation and the globe.

KENNAMETAL 1340

525 William Penn Place, Suite 3300 Pittsburgh, PA 15219 USA PH: 833-379-1506 www.kennametal.com

Kennametal® is a global supplier of solutions for wear, heat, and corrosion problems, a world-class manufacturer of components, and a service provider to a wide range of industries. Count on us for innovations that deliver productivity, reliability, and extended life in the harshest environments. We have a long history of helping our customers achieve success and a tradition of exceeding their expectations. By matching our advanced material solutions and technologies to your applications, we can help you solve your biggest wear problems, avoid costly downtime and catastrophic failures, and achieve significant savings.

KINGSBURY, INC.

2635

10385 Drummond Road Philadelphia, PA 19154 USA PH: 215-824-4961 | FX: 215-824-4999

www.kingsbury.com

Kingsbury, in business since 1912, is the first and leading manufacturer of fluid-film thrust and journal bearings. Our products are used in a wide variety of turbo machinery, including steam and gas turbines, compressors, gearboxes and pumps, with shaft sizes ranging from 25 to 1400 mm, and sliding velocities up to 130 m/sec. Please visit www.kingsbury.com for more details.

KISTLER INSTRUMENT CORP

2802

30280 Hudson Dr Novi, MI 48377 USA PH: 248-621-3571 www.kistler.com

Kistler is the global market leader for dynamic pressure, force, torque and acceleration measurement technology. Cutting-edge technologies provide the basis for Kistler's modular solutions. Customers in industry and scientific research benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes so as to secure sustainable competitive edge. Unique sensor technology from this owner-managed Swiss corporation helps to shape future innovations in energy and infrastructure sector.

KNIGHTHAWK ENGINEERING, INC.

2145

17625 El Camino Real, Suite 412 Houston, TX 77058 USA PH: 281-282-9200 | FX: 281-282-9333 www.knighthawk.com

KnightHawk Engineering specializes in Design, Failure Analysis and Troubleshooting of Static and Rotating Equipment. We are a Technology based Specialty-Engineering company offering Consulting, Field Services, Analysis and Testing. We have a broad spectrum of experience-based personnel utilizing our integrated systems approach to troubleshoot complex process equipment or to design and manufacture specialty equipment. Our customer base includes individual entrepreneurs to the largest industrial giants. With our new full function Metallurgical and Metrology Lab, our services include materials analysis, testing and reverse engineering.

KOBELCO COMPRESSORS AMERICA, INC.

2240

1415 Louisiana St., Suite 4111 Houston, TX 77002 USA PH: 713-655-0015 | FX: 713-982-8450 www.kobelcocompressors.com

Kobelco Compressors America, Inc. began manufacturing compressors in 1915 and today is a global leader in compressor technology, engineering, and innovation. Kobelco designs, manufactures, and packages Screw (API619), Reciprocating (API618), and Centrifugal (API617) compressors for virtually any process gas application. Each system is custom engineered for optimum performance and outstanding return on investment. Through innovative technology and quality manufacturing, Kobelco offers solutions to boost productivity, reduce operating costs, and safeguard the environment. Visit us to speak with our compressor experts and learn more about our custom engineered compression solutions.

KONGSBERG MARITIME INC.

1401

145 James Drive East St Rose, LA 70087 USA PH: 504-712-2799

www.kongsberg.com/maritime

Kongsberg Maritime is a world leader in marine technology. With an extensive portfolio of innovative and integrated products and solutions, Kongsberg Maritime delivers efficiency, reliability, flexibility, and environmental sustainability to enhance the business of its customers. Our approach to product design maximize performance by providing THE FULL PICTURE.

KRAFT WERKS ENGINEERING, LLC

1619

935 Heritage Drive Medina, OH 44256 USA PH: 330-721-7374 www.kraftwerkseng.com

Kraft Werks Group, based in Medina, OH, is a manufacturer of equipment serving a broad range of markets including Oil & Gas, Petrochemical, and Power industries. Our various products include Gyrol brand fluid drives, TLT Ash Handling Systems, and Kraft Werks brand machinery. Kraft Werks is the North American representative for SETCON brand of electromechanical variable speed gearbox. The combination of Gyrol with SETCON offer a broad range of variable speed solutions for electric motor driven rotating equipment. Kraft Werks has over 100,000 sqft of manufacturing space that performs heavy fabrication, vertical & horizontal turning, dynamic balancing and assembly.

KRAL-USA, INC.

1334

901A Matthews-Mint Hill Road Matthews, NC 28105 USA PH: 704-814-6164 www.kral-usa.com

KRAL is a leading manufacturer of screw pumps and flowmeters with innovative solutions to meet industry demands. A wide portfolio including API pumps and custom engineered solutions help to assure a competitive edge for our customers within their area of business. We look far beyond our own product offerings to gain full understanding of the customer's requirements, applications and strategic plans. Professional customer service is affirmed with a certified QM system in compliance with EN ISO 9001:2015. After the purchase, a reliable and fast service team is there for you with product support.

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1135

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Standard Alloys Inc., a KSB Company, is a full service solution provider offering replacement parts, repair and complete pump assemblies. Our factory and three repair centers are certified ISO-9001:2015 by DNV. Our services include custom engineered solutions designed by our engineering staff. These designs are supported with our in-house pattern shop, foundry and machine shop. We have the ability to pour over 300 alloys as well as develop custom alloys to fit your application. Parts manufactured at our Port Arthur, Texas foundry are supported by our extensive machine shop, which allows us to offer quick deliveries.

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2740

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Kulite is the World's recognized Leader in the science and engineering of piezoresistive sensors and holds more than 340 patents in this area. ISO 9001 Certified, Kulite manufactures all welded, high pressure, intrinsically safe, current output, voltage out, pressure transducers for resource exploration including submersible, downhole and towed array.

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LANCER SYSTEMS

1423

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Lancer is an engineering and manufacturing firm trusted by customers in the defense, aerospace, natural gas and oil industries. Lancer deploys cutting edge plastic, fiber optic and CeraComp®, a patented ceramic matrix composite technology. When used in bad-actor-pump applications, our CeraComp® bearings, wear rings, and other petrochemical pump components provide significantly increase pump reliability/MTBF as compared to the same components produced from conventional metal, monolithic ceramic/SiC or polymer materials.

LEISTRITZ ADVANCED TECHNOLOGIES CORP.

1126

165 Chestnut Street Allendale, NJ 07401 USA PH: 201-934-8262 | FX: 201-934-8266 www.leistritzcorp.com

Leistritz manufactures Screw Pumps for the process, oil and gas, power generation and transportation industries. A complete line of two, three, five and multiphase screw pumps handle flow rates to 15,000 gpm and differential pressures to 2,100 psi. Leistritz has the expertise to deliver packages requiring custom engineered solutions.

LEWA-NIKKISO AMERICA, INC.

1127

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For six decades we have set the technical standards for metering and process pumps, metering devices and complete systems for fluid metering. This is guaranteed by a solid technique, profound process and industry knowledge and the hermetically tight and absolute safe diaphragm technology. We design and manufacture efficient and customized solutions for virtually all metering, conveying, mixing, or odorizing tasks. With proximity to our customers – from engineering to technical advice or to commissioning on site – some 1,000 experts around the world enable a successful implementation of projects. High quality standards and a professional management ensure the best result.

LINCOLN ELECTRIC ADDITIVE SOLUTIONS

3026

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www.additive.lincolnelectric.com

3D metal printing factory for large turbomachinery and pump parts. Lincoln Electric Additive Solutions is a 24 hours-a-day/7 days-a-week manufacturing services provider of large 3D printed metal parts. It is vertically integrated, manufacturing its own power sources, wire feedstock, automation equipment and even the slicing and path planning software, SculptPrint™ OS, ensuring delivery of high-quality parts. Additive Solutions delivers as-printed and finished parts from a variety of industrial metals, including steels, stainless steels, and nickel alloys. For more information about Lincoln Electric and its products and services, visit the Company's website at www.lincolnelectric.com

LOBEPRO ROTARY LOBE PUMPS

1123

2610 Sidney Lanier Drive Brunswick, GA 31525 USA PH: 912-466-0304 | FX: 912-466-0086 www.lobepro.com

LobePro Inc. manufactures 3 lines of rotary lobe pumps: S-Series: Sludge, Mud, & Slurries; C-Series: Corrosives & Chemicals; and D-Series: Abrasives & Corrosives. Each line is also available in an API-Series: API 676 Compliant version. LobePro Rotary Lobe Pumps handle abrasives, self-prime, pump thick viscous materials, and pump a steady GPM flow up to 2000 GPM at steady pressures up to 150 PSI. Pumps are used in oil and gas applications: pumping clean drilling fluid, feeding decanting centrifuges, booster pumps in pipelines for oil containing abrasives and waste oil, and pumping jet fuel and diesel from tanks requiring a suction lift.

LONE STAR BLOWER AND COMPRESSOR

3035

8883 West Monroe Houston, TX 77061 USA PH: 832-532-3112 | FX: 832-532-3115 www.lonestarblower.com

Lone Star Blower, Inc. is a manufacturer, packager, and service company for blower and blower control systems with representatives located throughout North and South America and beyond. Products offered include gear driven single-stage turbo blowers with variable inlet and discharge guide vanes, gearless (high speed) turbo blowers, and vertically split multistage turbo blower technologies. Industries served include Water and Wastewater, Power, Petro-Chemical, Oil and Gas, Food and Beverage, Mining, and other industries using low pressure compressed air or gas in pressure or vacuum applications. Our aftermarket group provides repair services on most other major brand blowers in addition to our own.

LUBE-POWER. INC

1237

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2627

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PH: 305-591-8935 | FX: 305-591-1537

www.ludeca.com

Predictive and Proactive Maintenance Solutions including laser shaft and pulley alignment, bore alignment, straightness and flatness measurement, monitoring of thermal growth, online condition monitoring, vibration analysis, balancing, induction heaters and ultrasound testing equipment as well as related software, rentals, services and training.



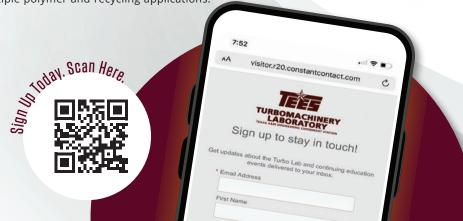
MAAG AMERICAS

1113

181 Pauley Street Eagle Rock, VA 24085 USA PH: 330-548-9708

www.maag.com

Maag Americas offers customized product solutions and services to maximize your performance and create a competitive advantage. We offer proven application expertise and unmatched capabilities in engineering and manufacturing to support you with the solutions that best fit your individual needs. Our standard products include dry-cut and wet-cut strand pelletizers; underwater pelletizers; gear pumps for polymer, extrusion and industrial applications; screen changers and filtration systems; pulverizers and color mixing systems; centrifugal pellet dryers; pellet production systems for multiple polymer and recycling applications.



MACHINE SAVER INC

2827

9788 Clarewood Dr. Suite 302 Houston, TX 77036 USA PH: 832-581-9908 www.machinesaver.com

MACHINE SAVER'S IoT wireless and wired machine protection and condition monitoring solutions. We supply automated machine conditioning monitoring software. Our 3 axis and proximity probe sensors are intelligent wire less triaxial vibration and temperature sensors (VTBNet). Our low cost solution moves data and not people. Our unique products, software and service reduce total cost of ownership thru simplified installation, lowered cost of maintenance, carefree data maintenance and auto analysis. Our goal is to provide our customers a low cost total machine advanced warning and protection solution for pumps, motors, fans, blowers, gearboxes and compressors by providing unique products, software and exceptional services. www.machinesaver.com

MACHVIB SERVICES CORPORATION

2935

8866 Gulf Fwy., Ste. 520 Houston, TX 77017 USA PH: 832-569-4426 machvibservices.com





MachVib Services Corporation is a vibration service company created to fill the needs for quality vibration monitoring services at a reasonable rate. Need an OEM replacement part but can't get it due to long lead times? Our partnership with various vendors allows us to provide access to replacement parts on demand. We are an independent vibration service company, therefore we can recommend the best possible solution for your vibration monitoring needs. At Machvib customer services is not a department, IT'S THE ENTIRE COMPANY!

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MAUDLIN PRODUCTS

1718

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www.maudlinproducts.com

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MAYEKAWA U.S.A., INC.

2813

10810 Train Ct Houston, TX 77041 USA PH: 832-547-2320

www.mayekawa.com/americas/mna

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MCNALLY-LLC 2648

7400 Beaufonts Spring Drive Richmond, VA 23225 USA PH: 804-885-0482 www.mcnally-llc.com

McNally-LLC is a small consulting company that provides mechanical and reliability engineering services specializing in turbo-machinery and ancillary equipment. We use the latest engineering software, instrumentation, data analyzers, and extensive know-how to help end-users select and purchase the most reliable turbo-machinery with the lowest life-cycle cost. We thrive in identifying the root causes that are creating problems and have a proven track record of providing value-added, cost-effective, and sustainable solutions developing short- and long-term strategies.

MECHANICAL REPAIR & ENGINEERING, LP

1826

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Mechanical Repair & Engineering, Inc. is an independent turbomachinery repair and service facility specializing in the reconditioning of high pressure, high energy, and multistage pumps, high speed gearboxes, steam turbines, and compressors. Its mechanical engineering staff, metallurgist, and years of dedicated maintenance service and experience offer the industry the highest quality engineered repairs. Its 40,000 ft2 facility is equipped with lathe swings to 112", dynamic balancing capabilities to 15,000 lb, and lifting capacity to 40 tons. Mechanical Repair & Engineering is the only service center in the Gulf Coast area for Coperion Corporation.

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MSI's reputation is founded on its ability to solve difficult rotating machinery problems using specialized vibration, strain, dynamic pressure, operating deflection shape (ODS), and surge/stall testing and analysis techniques. MSI also provides complete turn-key machinery and component development services, mechanical and fluid dynamic analysis services, and foil (air) bearing designs and products. In addition to specialized field and lab testing tools, computational tools regularly utilized by MSI include computational fluid dynamics (CFD), finite element analysis (FEA), and rotordynamics analysis packages. MSI's years of machinery experience have been leveraged to develop and support its motion magnification high-speed video system, VibVue®.

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METRIX VIBRATION

1935

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Metrix Vibration, a leader in the condition monitoring & asset protection industry is the preferred supplier of vibration monitoring systems to many of the world's leading manufacturers and users of cooling towers, gas turbines, generators, pumps, motors, fans, reciprocating compressors, and other rotating machinery. With headquarters in Houston, Texas, Metrix operates in more than 40 countries via factory direct sales and with a strategic network of instrumentation partners. Metrix invented the technology of simple, affordable machinery protection with our vibration switch offerings, revolutionary 4-20mA vibration transmitters, robust high-temperature velocity sensors, and innovative impact transmitter technology. We look forward to working with our customers to provide the best solution to meet their requirements.

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Miba Industrial Bearings produce hydrodynamic bearings and labyrinth seals for use in the Petrochemical, Refining and Power Generation markets. Our products are used in a wide range of high-performance applications (centrifugal turbines, compressors, motors and industrial pumps). Our technology enables those applications to run more efficient, powerful and environmentally friendly. Regardless of where our customers are located, they can rely on the performance of Miba Bearings. We accompany our customers around the world, supporting them with our products and services. Our network spanning four continents allows us to respond quickly and flexibly to the various needs of our customers.

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Mitsubishi Heavy Industries group companies are recognized by our customers for our technology, quality, efficiency, and reliability. Mitsubishi Heavy Industries Compressor Corporation is a leading manufacturer of API compressors and mechanical drive steam turbines. Our products are widely used in the oil & gas and petrochemical markets and range in size from 300mm – 2000mm in impeller diameter. Our US based 180,000 ft² state-of-the-art packing and service center, Pearland Works, is conveniently located in the Gulf Coast, just outside of Houston, TX. Backed by local sales, engineering, and operations experts, to support Mitsubishi and other OEM turbomachinery.

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1621

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Modern Power Systems examines the subjects that are changing the electricity sector, from generation, transmission and distribution to digitization and beyond. Renowned for its informed and insightful commentary MPS delivers up to date analysis and news as well as in-depth articles on trends, technology and exciting projects as well as leading opinion and thought from industry experts. With an impressive international print circulation of 11,749, the publication appeals to a broad cross-section of power industry professionals and its authoritative technical content makes it required reading for engineers involved in the development, construction, operation and maintenance of power plants and T&D systems.

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1241

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Modern Pumping Today is a national, monthly publication designed to keep the industrial pump and rotating equipment markets engaged and informed. Our articles address the key issues for the broad range of pumpreliant industries in every issue. The mission of MPT is to provide a blend of technical and educational-based insight, essential reading for the pump industry professional. MPT's readers are engineers and operations executives involved in new installations as well as continued maintenance and upgrades to existing facilities. MPT provides a unique opportunity to reach decision makers across the market. Find out more at www.mptmag.com.

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3019

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NETZSCH PUMPS NORTH AMERICA, LLC

1035

119 Pickering Way Exton, 19341 USA PH: 610-363-8010 | FX: 610-363-0971 www.pumps.netzsch.com

NETZSCH Pumps North America, LLC is the North American subsidiary of the operating group of NETZSCH companies. For over six decades NETZSCH has been manufacturing and supplying NEMO® Progressing Cavity Pumps and TORNADO® Rotary Lobe Pumps (Classic T1 version and T2, the most technologically advanced RLP market wide), NOTOS® Multiple Screw pumps, our NEW PERIPRO™ Peristaltic pumps, macerators/grinders, metering systems, mobile pumps and accessory equipment for custom and challenging applications. NETZSCH 's markets include Oil & Gas Upstream, Oil & Gas Downstream, Chemical, Pulp & Paper, Environmental & Energy, Metering Technology and Food & Pharmaceutical (FDA, 3A, EHEDG).

NIDEC INDUSTRIAL SOLUTIONS

1650

Via Fratelli Gracchi 39 MilCinisello Balsamo 20092 Milano ITALY PH: (+)390264451 www.nidec-industrial.com/market/oil-gas

Nidec Industrial Solutions is one of the leading manufacturers of motors, generators, power electronics and power quality systems for the oil and gas industry with power ranging from fractional to 100 MW. Nidec is your ideal technology partner throughout the lifetime of your equipment cycle in all industry segments, from exploration, extraction and transportation to refining and distribution.

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1704

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At Kato Engineering, we are proud of our 95-year tradition of innovative design and manufacturing excellence. Our ruggedly constructed generators have survived the harshest environments, and our commitment to meeting customer needs has made the Kato name synonymous with dependable power generation worldwide. Now a part of Nidec, Kato is a major supplier of prime and backup power generation in numerous global markets including oil & gas, marine, defense, data centers, and more.

NIKKISO CRYOGENIC INDUSTRY SERVICE

2605

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Nikkiso Clean Energy & Industrial Gases is a leading provider of cryogenic pumps, heat exchangers, process systems, turboexpanders, ORC energy recovery system, services, and solutions for the LNG, Hydrogen, Natural gas, waste heat and industrial gases industry. We are a subsidiary of Nikkiso Company Ltd, a leading industrial manufacturer headquartered in Tokyo, Japan, with over \$1.5 B in annual revenue, 8000 + employees worldwide, and publicly traded on the Tokyo Stock Exchange.

NORD-LOCK GROUP

1641

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3333 Coyote Hill Rd Palo Alto, CA 94304 USA PH: 833-375-4946 www.novity.us

Novity™, a commercial venture introduced by Xerox's Palo Alto Research Center (PARC), brings advanced predictive maintenance (PdM) technology to the industrial manufacturing sector to reduce costly unplanned downtime. The Novity solution is an Industrial Internet of Things (IIoT) technology that uses equipment sensors and proprietary algorithms to enable industrial manufacturers to see the future health of their production assets. The Novity TruPrognostics™ engine relies on a combination of machine learning and physics-based models of equipment. This allows Novity to predict equipment failures with 90 percent or better accuracy and lead times of months, not weeks or days.

NRG ENERGY SERVICES

2146

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The energy behind power generation - a new look at maintenance We provide a new perspective on maintenance. With over 30 years of power plant operation and maintenance and servicing a fleet of 32 GW of generating capacity, our experience is both substantial and wide-ranging. We provide unique solutions to maintaining plant production and keeping your units and equipment running. Maintenance Services has extensive knowledge in industrial plant processes and power generation equipment.

OERLIKON 1125

12012 Vanstory Drive Westbury, NY 11590 USA PH: 346-295-5253 www.oerlikon.com/metco

Oerlikon Metco enhances surfaces that bring benefits to customers through a uniquely broad range of surface technologies, equipment, materials, services, specialized machining services and components. The surface technologies such as Thermal Spray and Laser Cladding improve the performance and increase efficiency and reliability. Oerlikon Metco serves industries such as aviation, power generation, automotive, oil & gas, industrial and other specialized markets and operates a dynamically growing network of more than 50 sites in EMEA, Americas and Asia Pacific. Oerlikon Metco, together with Oerlikon Balzers, belongs to the Surface Solutions Segment of the Switzerland-based Oerlikon Group.

OMEGA RENK BEARINGS PVT. LTD.

2512

Anand Nagar Bhopal 462021 INDIA PH: (+)0091(755)2685250 www.omegarenk.com

A privately owned bearing manufacturer based out of India. Manufacturer of white metal lined sliding bearings for motors, generators, pumps, turbines, compressors, gearbox manufacturers, hydro segment and marine segment. Strong experience in manufacture and design of: 1. Fixed profile (cylindrical, lemon, offset & 4 lobe) bearings, 2. Thrust & guide pads 3. Tilting pad bearings (axial & radial) The company is ISO 9001,14001 & 45001 certified. Experience Excellence at Omega Renk Bearings Pvt. Ltd.

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2218

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1437

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Partners Specialties Inc. (PSI) provides comprehensive specialty mechanical services for petrochemical, general contractor and industrial complexes. Hydraulic torqueing and tensioning, field machining and re-tubing, line isolation, tube plugging along with other supporting services ranging with field service pipe, structural & coded welding (R, S & U Stamps), shop fabrication, exchanger component repair, and compressor related needs. Providing whether planned or emergency needs, our turnkey customer solution driven integrated services with highly skilled craftsman and specialized equipment promote a comprehensive emphasis on safety, quality, cost-effectiveness and maintaining a highest level of customer satisfaction.

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2834

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1302

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4680 S Sam Houston Pkwy E Houston, TX 77048 USA PH: 713-426-4445 www.precisionmachllc.com

"The mission of Precision Machinery Contractors (Precision) is to provide best in class service for the life cycle of our client's rotating equipment with excellence in safety, quality, and efficiency. This is achieved by employing an elite team and providing them with premiere tooling, clear, practical, and up to date safety and quality systems, standard operating procedures, and continuous training." Our core team has over 150 years combined experience in the rotating equipment sector with key knowledge of:

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2323

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Premium Alloys is a specialty metals distributor located in Houston, Texas. As a stocking service center, we deliver solutions to our customers and uphold our commitment to excellent quality, first class service, and innovation. We offer a full range of capabilities that provide Premium Alloys with a competitive advantage in the wide range of products it carries. Premium Alloys services many industries, including aerospace, oil & gas, power generation, pumps & valves, and many more. We rely on value-added services and quick turnaround times to make us a one stop shop for our customers.

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2924

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ProMRO software by Clients First is designed for the MRO industry with a focus on aviation and equipment. ProMRO is embedded within Acumatica Cloud ERP and provides fast quoting, real-time costing of jobs, tools & inventory management, distribution, WMS, tracking of customer equipment, shop floor app, invoicing, payables & more in one easy to use system. Mfg also available. Clients First is in the business of helping small to medium sized business implement accounting, distribution and operational software for organizations worldwide. As one of six offices across the US, the Texas office has strong expertise within the MRO, Job Shop and Manufacturing.

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Fluke Reliability offers reliability and maintenance teams the tools, software, and services they need to optimize asset performance. Home to three powerful iconic brands – PRUFTECHNIK, eMaint, and Fluke Connect – we serve over 70,000 customers worldwide with a relentless dedication to quality, innovation, and service. Our products inform customers on the health of their assets and our software and services drive better maintenance decisions – improving productivity, driving uptime, and reducing costs.

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2918

10200 W. Airport Blvd. Stafford, TX 77477 USA PH: 713-830-7601 www.pvtvm.com

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R

RAM ALLOYS LLC

1307

12233 FM 529 Houston, TX 77041 USA PH: 713-466-1890 www.ramalloys.com

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2451

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2535

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www.riverhawk.com

Riverhawk Company is a custom design engineering and manufacturing firm with over 400 years of engineering experience. Riverhawk core products originate from designs developed to solve specific customer issues when standard products could not meet the demand. Riverhawk engineered solutions have focused on fastening systems, rotational power transmission issues and shaft solutions across several industries. Riverhawk provides solutions to daily problems that most of the competition wouldn't even consider.

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1810

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1315

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www.rotatingmachinery.com

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1222

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Rotech is a manufacturer and designer of various Pumps, Seals, and Valves. Rotech has a broad range of pumps including ANSI, ISO, Trash, Self-Priming and adding multiple product lines. Rotech is based globally, with main HQ in Texas and Toronto.

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1217

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2050

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S

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1951

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www.schneider-electric.us/en/work/solutions/industrial-process-automation/turbomachinery-control

Schneider Electric is the global specialist in energy management and automation. With revenues of ~€27 billion in FY2015, our 160,000+ employees serve customers in over 100 countries, helping them to manage their energy and process in ways that are safe, reliable, efficient and sustainable. From the simplest of switches to complex operational systems, our technology, software and services improve the way our customers manage and automate their operations. Our connected technologies reshape industries, transform cities and enrich lives. At Schneider Electric, we call this Life Is On.

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SENSORADE SA

2819

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2907

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SHACKELFORD-WATTNER

2115

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Shackelford-Wattner along with our sister company, Kile Industries, Inc., is conveniently located in the shadow of Houston's Hobby Airport and has been servicing the needs of the rotating equipment industry for over 50 years. Shackelford-Wattner and Kile Industries have earned a reputation for producing the highest quality products and services which include manufacturing, balance, inspection, repair, replacement, special fasteners, lapping tools, and plug/ring gages for all types of gear, disc, and diaphragm couplings. We take great pride in being able to provide quick, accurate, and complete support of couplings and coupling related products.

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1502

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1026

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SHIN NIPPON MACHINERY CO., LTD.

1947

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Shin Nippon Machinery is the only manufacture in the world that produces API610 process pumps and API611/612 steam turbines in the same factory in Japan. This package solutions approach uniquely address the need on the oil and gas industry. With high quality and reliability, SNM's process pumps and turbines have been adopted for use in refining and petrochemical equipment in more than 70 countries around the world.

SIEMENS ENERGY INC.

15375 Memorial Drive Houston, TX 77079 USA PH: 713-973-5497 www.siemens.com



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Siemens is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 165 years. The company is active in more than 200 countries, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. In fiscal 2017, which ended on September 30, 2017, Siemens generated revenue of €83.0 billion and net income of €6.2 billion.

SIEMENS LARGE DRIVES LLC

1421

100 Technology Drive Alpharetta, GA 30005 USA PH: 281-236-2333

https://www.siemens.com/us/

Siemens Large Drives are one of the world's leading manufacturers of medium and hugh voltage motors and drives. These products form the basis for drive systems optimized to meet the demands for nearly any industry and application. Our portfolio is expanded to include complete solutions including electrification and automation. Digitalization solutions and our extensive global services complete the range.

SIFCO ASC 1311

5708 F. Schaaf Road Independence, OH 44131 USA PH: 800-765-4131 www.sifcoasc.com

SIFCO Applied Surface Concepts provide practical, cost-effective selective brush plating solutions to improve part performance and reduce manufacturing costs through corrosion protection, increased wear resistance, increased hardness, improved conductivity, anti-galling or slip. SIFCO ASC surface enhancement technologies and brush plating services have been utilised for over 50 years on both OEM components and on parts requiring refurbishment in the aerospace, oil and gas, general industry and power generation sectors.

SIMERICS. INC.

2911

1750 112[™] Ave. N.E., Ste. C250 Bellevue, WA 98004 USA PH: 425-502-9978 www.simerics.com

Simerics-MP+ CFD software is an efficient and accurate tool that can be used to simulate and analyze a wide range of positive displacement machines (pumps and compressors), valves, motors, turbomachines and hydraulic systems. The complete time dependent three-dimensional CFD transport equations are solved and the predictions have been extensively validated with measurements. Examples of Pumps include Gerotor, Crescent, Variable Vane, External Gear, Radial Piston, Bent Axis Piston, Progressive Cavity, Swash Plate Piston, Rolling Piston, Variable Flow Gear, Axial-Centrifugal. Compressors include Scroll, Lobe, Single Screw, Twin Screw, Rolling Piston, Reciprocating, Vacuum, Axial-Centrifugal. Valves include Spool, Control, Release, Ball, Poppet, Flip, Axial, Circumferential.

SKF MAGNETIC MECHATRONICS

2141

2 rue des Champs Saint-Marcel 27950 Eure FRANCE PH: (+)0232643323 www.skf.com

The SKF S2M Magnetic Bearing is a standard for Oil & Gas turbomachinery, with more than 1200 references in operation, and now having successfully pioneered the application to subsea natural gas compressors. It allows oil free design of centrifugal compressors, high speed electric motors, turboexpanders and turbines. A highest reliability is achieved, powerful monitoring at user's disposal, and the concept avoids oil lubrication issues like acid gas dilution, clogging in heat exchangers, energy consumption, fire risk. Turbomachinery with SKF S2M Magnetic Bearings is used in onshore and offshore, upstream to downstream, for natural gas treatment, transportation, storage, petrochemical production or power generation.

SLM SOLUTIONS

1403

48561 Alpha Dr Wixom, MI 48393 USA PH: 248-850-4925

www.slm-solutions.com/de

SLM Solutions is an integrated solutions provider and metal additive manufacturing partner. The company takes a vested interest in customers' long-term success with metal additive manufacturing, and its robust Selective Laser Melting machines optimize fast, reliable, and cost-efficient part production. SLM Solutions' experts work with customers at each stage of the process to provide support that elevates the use of the technology and ensures their return on investment is maximized. A publicly-traded company, SLM Solutions Group AG is headquartered in Germany, with offices in Canada, China, France, India, Italy, Russia, Singapore, and the United States.

SMP (SPECIALTY MAINTENANCE PRODUCTS)

1643

5711 Clarewood; Suite A&B Houston, TX 77081 USA PH: 713-667-4402 | FX: 713-669-8618 www.smptools.com

SMP provides safer and more efficient tools for removing open and closed impellers off of ANSI centrifugal pumps. Hand Safety, and the protection of internal seals, make the KIRIS impeller removal system a must have for your pump shop. SMP also manufactures and distributes safer and more efficient tools for pipe and flange maintenance.

SOFTINWAY INC.

1815

20 Burlington Mall Rd, Ste 450 Burlington, MA 01803 USA PH: 781-328-4310 www.softinway.com

SoftInWay, Inc. is a global R&D engineering company specializing in the development of efficient turbomachinery components and systems by offering its integrated and automated software platform, AxSTREAM ® for all steps of the turbomachinery design, redesign, analysis, and optimization process (including complete 3D design, thermodynamic cycles, rotor dynamics, and secondary flow and cooling system simulation). SoftInWay also offers a number of engineering services and educational courses, available both online and in a classroom-style setting.

SOHRE TURBOMACHINERY INC.

2728

34 N. Maple St., Ste. 7 Florence, MA 01062 USA PH: 413-267-0590 | FX: 413-567-0592 www.sohreturbo.com

Sohre makes shaft grounding brushes to control stray electrical currents in electrical and nonelectrical turbomachinery (compressors, Sohre brushes are useful for electrostatic, electromagnetic, or other electrically induced stray currents. The current rating of Sohre brushes ranges from 1 to 100 DC amperes per year of bristle life. Brushes utilize special alloy bristles and are run directly on shaft, either dry or in oil. Cleaning or maintenance generally is not necessary.

SOLAR TURBINES INCORPORATED

1719

P.O. Box 85376 San Diego, CA 92186-5376 USA PH: 619-544-5352 FX: 619-544-2633

Headquartered in San Diego, California, USA, Solar Turbines, a subsidiary of Caterpillar Inc., is one of the world's leading manufacturers of industrial gas turbines and compressors, with approximately 15,000 units with more than 2.3 billion operating hours in more than 100 countries. Products from Solar play an important role in the development of oil, natural gas and power generation projects around the world. Solar's products include gas turbine engines, gas compressors, and gas turbine-powered compressor sets, mechanical-drive packages and generator sets.

SOLBERG OIL MIST ELIMINATORS

1503

1151 Ardmore Ave Itasca, IL 60143 USA PH: 630-616-4411

http://www.solbergmg.com

Solberg designs and manufactures vacuum assisted and static oil mist eliminator systems to capture the vented emissions from turbine and compressor lube oil systems, and engine crankcases. Our systems protect the rotating equipment by preventing seal leakage and protect the surrounding environment by eliminating the oily emissions.

SOUTHERN STATES MILLWRIGHTS

18525 W Lake Houston Pkwy Suite 103 Humble, TX 77346 USA

PH: 281-460-1886

www.southernstatesmillwrights.org



2052

The Southern States Millwrights Regional Council was established over a decade ago to address the growing need for a safe, skilled, productive rotating equipment workforce in the Southern United States. The SSMRC is nearly 6000 members strong and we are constantly training tomorrow's workforce to keep up with demand and recruiting the best in the industry to service our partners.

SOUTHWEST IMPREGLON

2413

15014 Lee Rd. Humble, TX 77396 USA

PH: 281-441-2000 | FX: 281-441-1221

www.swimpreglon.com

Southwest Impreglon, a protective coating applicator located on the NE side of Houston, has been serving the Gulf Coast since 1976 solving corrosion, fouling, erosion, and heat related issues for the rotating equipment industry, with crane capacity of up to 50 tons, and the recent addition of thermal spray capabilities.

SPARKCOGNITION

1410

12708 Riata Vista Cir Austin, TX 78727 USA PH: 936-707-2114

www.sparkcognition.com

SparkCognition delivers enterprise scale AI solutions that enable organizations to optimize processes, predict future outcomes, and prevent cyberattacks. We augment human intelligence, driving digital transformation and bottom-line results. With deep expertise across critical industries, we're working together with our clients to help solve problems, big and small, that matter most to them.

SPECTRA QUEST, INC.

2908

8227 Hermitage Road Richmond, VA 23228 USA

PH: 804-261-3300 | FX: 804-261-3303

www.spectraquest.com

Manufacturer of Machinery Fault Simulators for the Mechanical Engineering Community.

SPRING POINT SOLUTIONS

3023

4 Moulton St Portland, ME 04101 USA PH: 888-382-7835 www.springpt.com



Spring Point is a software company catering to the unique requirements of the industrial community where consistency and quality are crucial. We have a proven track record with our flagship ERP system, MotorBase® and our QM [Quality Management] Wizard (TM), which supplements training, facilitates consistency, and ensures high quality work while bridging the experience gap between young unskilled labor and the experienced, retiring workforce. Our software programs are integrated into a single comprehensive suite that can be tailored to meet the needs of individual companies of any size.

SSS CLUTCH COMPANY, INC.

2320

610 West Basin Road New Castle, DE 19720 USA PH: 302-322-8080 www.sssclutch.com

SSS Clutches- Propulsion systems for 50+ navies; 650+ peak-load generators for synchronous condensing, single-shaft combined-cycle plants, steam turbines to 400 MW in CHP/Cogen, (CAES) plants, 500+ diesel engine driven rotating UPS generators, dual driven pumps, dual driven compressors, including gas pipeline, dual driven process and boiler fans, energy recovery applications, thousands of turning gear and gas turbine starter drives.

STEIN SEAL INDUSTRIAL DIVISION

2527

375 East Church Road Telford, PA 18969 USA

PH: 215-256-0201 | FX: 215-703-9864

www.steinsealind.com

Stein Seal Industrial Division is a world-class manufacturer of mechanical sealing systems. With over sixty years of mechanical seal Development, Engineering, Manufacturing, and repair service history. With strategic repair and development centers, Stein is uniquely positioned to service the needs of the turbine, compressor, petrochemical and heavy industries market segments.

STORK H&E TURBO BLADING

2220

334 Comfort Rd. Ithaca, NY 14850 USA PH: 607-277-4968 L EX:

PH: 607-277-4968 | FX: 607-277-1193

www.he-machinery.com

Stork is the leading manufacturer of steam turbine blades, buckets and nozzles, gas turbine compressor blades, stator vanes, IGV, axial compressor, expander, FD, ID blower and generator blades. Stork is the largest and oldest independent manufacturer of these spares in the world. All OEM model turbines are supported, including obsolete nameplates. Stork delivers world class quality, at pricing and delivery that will be a welcome improvement upon your usual OEM experience. Stork also offers reverse engineering services for all of your components from small pins or valve parts, to the largest turbine casings. We use our 3D Blue Light Laser scanning system to capture your critical part data.

STRUCTURAL TECHNOLOGIES

2913

1003 Clay Court Columbia, MD 21046 USA PH: 281-241-5809

www.structuraltechnologies.com

STRUCTURAL TECHNOLOGIES is firmly committed to its mission of making structures stronger and last longer. We develop and integrate products, engineering support, repair and maintenance services to provide value-added solutions to owners, engineers and contractors. STRUCTURAL TECHNOLOGIES provides state-of-the-art proprietary products and engineering support, and delivers repair & maintenance services through our construction licensees.

SULLAIR A HITACHI GROUP COMPANY

2517

1 Sullair Way Michigan City, IN 46360 USA PH: 800-785-5247 www.sullair.com/oilfree

Sullair provides a broad range of centrifugal compressor options in both packaged and custom configurations. The Sullair lineup includes products up to 118,000 cfm with discharge pressures up to 725 psi all providing oil free air. Sullair and parent company Hitachi have over 80 years combined oil free compressor experience.

SUMITOMO HEAVY INDUSTRIES GEARBOX CO., LTD. 26**47**

3-33, 2-Chome, Nakanoshima, Kita-ku Osaka-shi 530-0005 Osaka IAPAN PH: (+)815020362629

www.shigearbox.com

Sumitomo Heavy Industries Gearbox Co., Ltd., formaly called SEISA Gear Ltd., has more than 100 years of manufacturing experience in highly customized gear drives, highspeed acceleration and reduction gears for compressors and turbine generators, mill drives for cement and coal, and gear couplings. As a result, those geared products are trusted and used in various fields as key components.

SUNDYNE, LLC 2235

14845 West 64[™] Ave. Arvada, CO 80007 USA PH: 303-425-0800 www.sundyne.com

Sundyne manufactures highly reliable engineered process Pumps and Compressors. The Sundyne product line consists of Ansimag Magnetic Drive Non-Metallic Pumps, HMD/Kontro API-610/685 Pumps, Sundyne API-610 Pumps, Sundyne API-617 Process Compressors, Marelli API-610 Pumps, and Sunflo High Pressure Pumps. With facilities and expert Channel Partners around the world, Sundyne products are an integral part of the process industries that fuel life's basic needs.

SOUTHWEST RESEARCH INSTITUTE

2626

6220 Culebra Road San Antonio, TX 78238-5166 USA PH: 210-522-2960 www.machinery.swri.org

Southwest Research Institute® (SwRI®) is an independent, nonprofit. applied research and development organization, founded in 1947 and headquartered in San Antonio, Texas, with more than 3,000 employees and an annual research volume at nearly \$726 million. SwRI provides quickresponse field consultation and design services to solve vibration, pulsation, and performance problems associated with plant machinery and piping systems. SwRI is recognized for its turbomachinery services from concept design to full-scale testing.

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T.F. HUDGINS, AN ALLIED RELIABILITY BRAND

1627

10344 Sam Houston Park Dr., Suite 110 Houston, TX 77064 USA PH: 713-682-3651 www.alliedreliability.com

T.F. Hudgins, an Allied Reliability brand, specializes in protecting assets and driving reliability improvements for reciprocating and rotating machinery using proven solutions and in-depth application expertise. We leverage internal engineering, manufacturing, and project management capabilities, as well as the resources of leading manufacturing partners to yield meaningful improvements in productivity, longevity, efficiency, cost-effectiveness, safety, and environmental compliance.

TECHNOGENIA INC

1742

708 Old Montgomery Rd. Conroe, TX 77301 USA PH: 936-441-4770 www.technogenia.com

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TECHSTAR

2348

802 W. 13[™] St. Deer Park, TX 77536 USA PH: 281-542-0205 www.techstaris.com

With over 20 years in process controls and industrial automation, TechStar has everything needed to help get your measurement and process challenges solved and running in their optimal performance and output. Experience, innovative solutions, training and service are the foundation of what TechStar offers to customers. Backed by our world class manufacturing strategic partners, our team is well equipped to see you through every step of the toughest applications and challenges.

TEIKOKU USA

1216

959 Mearns Road Warminster, PA 18974 USA PH: 267-485-4043 www.teikokupumps.com

Sealless and Leakproof Canned Motor Pumps, as designed and manufactured by the global Teikoku Group, provide customers looking for high levels of mechanical reliability and fluid containment the ultimate in centrifugal pumps for the transfer of hazardous, expensive and environmentally sensitive fluids. Teikoku and Chempump products are loaded with features that help users reduce installation, maintenance and space-related costs.

TERN TECHNOLOGIES, INC.

1735

200 W. 34[™] Ave., # 1017 Anchorage, AK 99503 USA PH: 907-522-2411 | FX: 907-522-2412

www.terntech.com

Tern Technologies, Inc. is a full service rotating equipment consulting group offering the best in optical and laser alignment, precision measurement, vibration analysis, mechanical engineering and instrumentation support. Their personnel have extensive world-wide experience with a wide variety of rotating equipment. Industries serviced include power generation, petrochemical, pipeline, pulp and paper, mining and marine propulsion. Services include shaft alignment, thermal growth studies, internal alignment, routine periodic vibration surveys, field balancing, vibration analysis and permanent vibration monitoring system engineering, installation and maintenance. Rotating equipment engineers provide field service support for construction and start-up, failure analysis and design audit.

TEXAS COMPRESSION, LLC

2915

2214 West 43RD Street Suite: B Houston, TX 77018 USA PH: 713-290-0202 | FX: 713-290-0303

www.texascompression.com

Texas Compression, LLC is a Houston-based mechanical and industrial services contractor offering a complete range of professional and technical services. Our mission is to safely deliver the highest level of service and premium products maximizing the uptime of critical process equipment. With more than 30 years' experience working in the energy industry, we guarantee we will safely complete your project and exceed your expectations. Texas Compression specializes in situations where safety, quality and reliability are a priority.

THE VIBRATION GUYS, LLC

3027

PO Box 1944

Pearland, TX 77581 USA

PH: 281-576-7212 | FX: 832-295-4840

www.thevibrationguys.com

The Vibration Guys™ is a world-class condition monitoring solutions company that specializes in vibration analysis, non-destructive testing, laser alignment, field balancing and other specialized services and diagnostic services for rotating equipment. We provide preventive and predictive maintenance for all industries utilizing rotating equipment including the oil & gas industry encompassing upstream, midstream, and downstream; petrochemical, chemicals, energy generation & transmission, food and beverage bottling and manufacturing, forestry, medical & specialty gases production, and other manufacturing specialties. We have pump specialists with over 30 years of field experience.

THOMAS PUMP & MACHINERY

1027

120 Industrial Drive Slidell, LA 70460 USA PH: 985-649-3000 www.ThomasPump.Com



Thomas Pump manufactures the T-GTO Pitot Tube pump in the USA. The T-GTO is a high-pressure centrifugal pump designed for a pressure range of 600-1500 psi and flow rates up to 400 GPM. In addition, we engineer, design, and manufacture custom pump systems that are tailored to your plant's demand. Our commitment to service is highlighted by our 24/7 XCHANGE program, sending out replacement pumps to customers within 24 hours of a request.

THORDON BEARINGS INC.

1711

3225 Mainway Burlington ON L7M 1A6 Ontario CANADA PH: 905-335-1440 | FX: 905-335-4033 www.ThordonBearings.com

Thordon Bearings designs and manufactures a complete range of self-lubricating polymer bearings for various operating environments. Thordon has several grades that in virtually all applications and can replace greased bronze bearings in all applications where they are currently installed such as vertical pumps, aerators, flocculators, screens, butterfly valves or pivot point applications. Thordon polymers are easy to machine and tube stock can be kept on the shelf for quick repair. Thordon's strong and recognizable global brand is known for high quality and superior performance.

TOROUEMETERS LIMITED



2735

West Haddon Road Ravensthorpe NN6 8ET Northamptonshire UNITED KINGDOM PH: (+)4401604770232 | FX: (+)4401604770778 www.torquemeters.com

Measuring steady state torque and torsional vibration in a single product, their Torquetronic(TM) Continuous Duty Torque measurement system is the recognized industry standard for accurate power measurement of mechanically driven turbo machinery in the Oil, Gas and Petrochemical industries. Torquemeters' 800 family of display electronics provides a flexible platform to show real time continuous torque and torsional vibration analysis, including FFT capability. SIL2 capability now available for real time accurate torque/power measurement for process control.

TOTAL INDUSTRIAL SERVICES SPECIALTIES, INC.

1531

12800 Fugua, St Houston, TX 77234 USA

PH: 281-922-7555 | FX: 281-922-7555

www.tissinc.com

Total Industrial Services Specialties, Inc. (TISS) Is the one stop shop for Millwright Services, Field Machining, Bolt Toquing, Machine Shop Services and Equipment Repair. We specialize in the installation, maintenance and repair of Turbines, Pumps, Compressors (Reciprocating and Centrifugal), Extruders, Gear Boxes and other Related Equipment. TISS takes great pride in providing quality, efficiency and most of all, the safest workforce in the industry.

TRICO CORPORATION

1747

1235 Hickory Street Pewaukee, WI 53072 USA PH: 262-509-0416 | FX: 262-691-2576 www.tricocorp.com

Trico Corporation provides lubrication management solutions with a focus on industrial equipment performance and reliability. We have accomplished this by combining high-performance lubrication products with our oil analysis services and in-plant services, as well as lubrication management training. Our core products include storage and handling, contamination control, oil sampling, constant level lubrication, desiccant breathers, oil level sensor, grease lubrication, filtration, central lubrication, and visual inspection products.

TRINITY COATINGS LLC

2715

25225 Highway 288 Rosharon, TX 77583 USA PH: 281-845-0022 www.trinity-coatings.com

Trinity Coatings, LLC was formed in 2014 in Rosharon, Texas. We started to provide a coating solution to our sister company Trinity Turbine Technology, LP. Trinity Coatings, LLC now grown to provide coatings services and solutions to numerous companies in the Power Generation, and Oil & Gas, and Petrochemical industries.

TRI-SEN SYSTEMS CORPORATION

2249

109 Magellan Circle Webster, TX 77598 USA PH: 281-286-9700 www.tri-sen.com

Tri-Sen Systems Corporation, provides turbomachinery controls and consulting to the power and process industries with a focus on supplying application appropriate control for turbines, compressors and generators.

TSS TURBINE SPECIALTY SERVICES

2641

309 CR 2242 Cleveland, TX 77327 USA PH: 281-562-7655 www.turbinespecialty.com

Steam Turbine Repair and parts Pump repair and Service Gear Box Repair and Service Babbitt Bearing manufacture and repairs Fab shop- Skids, Tanks, Gas and Oil Manufacture Parts- All Steam Turbines New Rotors Machining - Line Bore, Fly Cutting, incerts, Balancing- of all types of Rotors Sand Blasting - Industrial Painting.

TURBINE PUMP AND COMPRESSOR

2542

8040 Leesa Lane Pasadena, TX 77507 USA PH: 281-991-1997 | FX: 281-991-1564 www.T-P-C.net

TPC is specialized in shop repair, field service repair and sales of parts for steam turbines, pumps, blowers, gearboxes, reciprocating and centrifugal compressors. We package reciprocating compressors and pump units. TPC performs complete compressor overhauls in the field or in the shop. Compressors can be re-engineered for process changes or to maximize capacities. FEA studies are performed to maximize new designs of piston and rod assemblies. Manufacture new cylinder liners and install complete in cylinders.

TURBOMACHINERY INTERNATIONAL PUBLICATIONS

1829

485f US Highway 1 South, Suite 210 Iselin, NJ 08830 USA

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www.turbomachinerymag.com

Turbomachinery International covers industries engaged in all forms of energy, including power generation, electric utilities and cogeneration. It also covers oil & gas refining, gas processing, compression, drilling and exploration. The emphasis is on application where gas and steam turbines and related turbomachinery are used worldwide. Coverage includes maintenance, overhaul and repair of all turbines and rotating equipment, including pumps and compressors. Turbomachinery News/Blog is an interactive hub, featuring a daily newsletter loaded with the latest news, blogs, commentary from top experts around the world, engineering data and graphics, and cutting-edge stories that you won't find in print.

TURBOMACHINERY LABORATORY

2022

Texas A&M University MS 3254

College Station, TX 77843-3254 USA





The Turbomachinery Laboratory, part of The Texas A&M System, conducts theoretical and applied research intro reliability and performance of turbomachinery. The Turbo Lab impacts the industry through three pathways: 1) Research: The Turbomachinery Research Consortium was formed in 1983 to find answers to important questions of reliability and performance of turbomachinery for industrial companies who supply annual research grants. 2) Education: The Turbo Lab produces engineers ready to work by offering undergraduate and graduate engineering education. 3) Professional Workforce Development: The Turbo Lab organizes the annual Turbomachinery & Pump Symposia in Houston and the biennial Asia Turbomachinery & Pump Symposium in Singapore.

TURBOTIDES. INC.

21 Pinneo Hill Rd. Hanover, NH 3755 USA PH: 480-313-7277 www.turbotides.com



1749

TurboTides is the newest most modern and powerful Design and Analysis software system available for all disciplines of Turbomachinery - Pumps, Compressors, Fans and Turbines. Emphasis is placed on modern and seamless workflow for more rapid and accurate design iterations. TurboTides is also premiering an industry first 'Al Driven Optimization' for turbomchinery. For the first time, users will be able to design compressors, fans, pumps, and turbines with a seamlessly integrated design workflow combined with a powerful optimizer to achieve fast turnaround times for their design iterations.



UNIVERSAL PLANT SERVICES

1647

4460 Highway 225 Deer Park, TX 77536 USA

PH: 281-694-6000 | FX: 281-479-6273

www.universalplant.com

Universal Plant Services (UPS) is one of the largest comprehensive service providers for the energy industry, providing project management, installation, maintenance and repair services for rotating and fixed equipment for daily maintenance requirements, turnarounds and capital projects.



VELO3D 1422

511 Division St. Campbell, CA 95008 USA PH: 408-610-3915 www.velo3d.com

Velo3D provides end-to-end metal 3D printing solutions for mission-critical parts in the space, transportation, and energy industries. Unlike conventional metal 3D printing solutions or traditional manufacturing methods, Velo3D helps design engineers build the complex parts they need without compromising their design or part quality.

VIBRATION INSTITUTE

1620

2625 Butterfield Rd. Oak Brook, IL 60523 USA PH: 630-654-2254 www.vi-institute.org

The mission of the Vibration Institute is to disseminate practical information on evaluating the behavior and condition of machinery without commercial interest. The Institute offers a variety of programs, including education, training, certification, and opportunities for technical knowledge exchange. Our members share information, procedures, and cutting-edge data through formal training, networking, meetings, and publications. We are a non profit Association and extremely proud that the our vibration analyst personnel certification program was accredited by the American National Standards Institute in March 2010. ANSI, now ANAB (ANSI National Accreditation Board).

VIEWTECH BORESCOPES

2929

1745 Barlow Street Traverse City, MI 49686 USA PH: 231-943-1171 | FX: 231-680-4264 www.viewtech.com

ViewTech is North America's top borescope company. ViewTech Borescopes mechanical articulating video borescope is a nondestructive visual testing instrument used for the remote visual inspection of machinery, equipment, and components. Our borescopes are available in a variety of configurations suitable for different tasks, with optional insertion tube lengths and diameters, as well as different light wavelengths: white, infrared, or ultraviolet. The video signal from the VJ-3 can be viewed on the integrated LCD display or an external monitor. Contact us for a no-cost, no-obligation video borescope demo that allows you to test-drive a ViewTech borescope at your own facility!

VOITH TURBO

2703

25 Winship Road York, PA 17406 USA PH: 717-767-3200 www.voith.com/usa/en

The advanced technologies of Voith Turbo drive machines that move millions of people and goods throughout the world. These technologies safely and efficiently transmit and control power under extreme conditions. The company's extensive range of power transmission products are available for new and retrofit applications which include hydrodynamic variable speed turbo couplings, multistage variable speed drives, high speed and high powered API gearboxes, electrohydraulic actuators, I/P converters, and digital turbine control modules. Featured is the all new VoreconNX, a groundbreaking hydrodynamic power transmission that offers an 8% efficiency improvement in the lower power range.

VORTEX PIPE SYSTEMS

2053

3736 Bee Caves Rd Austin, TX 78746 USA PH: 713-623-3085 www.vortexpipe.com

Vortex produces advanced flow technology pumps, ESP's, pipe components, flow assurance and sophisticated drainage devices. Vortex' unique high velocity rotational flow increases line capacity with energy savings, due to greatly reduced friction and prevents line blockages. They are also piggable. Vortex delivers compound lifetime CapEx and OpEx savings for Brownfield and new fluid flow projects. Vortex units have no moving parts, consume no energy and need no maintenance. Their adoption into lines permanently improves the system curve. Ask us how Vortex can help solve your flow problems, reducing energy and other OpEx costs.

W

WEG 2151

6655 Sugarloaf Pkwy. Duluth, GA 30097 USA PH: 678-249-2000 www.weg.net

Founded in 1961, WEG has grown into a global solutions provider of industrial electrical technologies. WEG is the largest industrial electric motor manufacturer in the Americas and one of the largest manufacturers of electric motors in the world producing more than 10 million units annually. Committed to growth on a global scale, WEG continually invests in state-of-the-art manufacturing facilities and processes, and the development of new and improved industrial electrical solutions. WEG offers a diverse and integrated product line that includes motors, drives, controls, transformers, and generators. WEG has committed to an R&D investment of 3% of annual global sales.

WOOD 2317

15115 Park Row Drive Houston, TX 77084 USA PH: 281-920-4442 www.woodplc.com/vdn

Wood's vibration, dynamics and noise capability (VDN) is the leading provider globally in addressing vibration, reliability, integrity and noise issues on compressors, pumps, piping and associated equipment. Specialist design and field services include pulsation, torsional, lateral, surge simulation, ODS, resonance, water hammer, piping transients, piping integrity checks, pipe stress, acoustic fatigue, FIV, FIT, AIV, and smallbore piping analyses for onshore, offshore and subsea facilities. VDN also provides damping products and absorbers to control vibration. Attend our technical presentations or check out our vibration demo at booth #2317!

WOODWARD INC.

2311

3800 North Wislon Ave Loveland, CO 80538 USA PH: 970-962-7518 www.woodward.com

Woodward is the Turbomachinery Control Expert, providing outstanding control system, actuation, valve, and safety system technologies for steam turbine, gas turbine, and compressor equipment. Woodward strives to reduce total cost of ownership and improve system performance and reliability by increasing availability, efficiency, start performance, and operating range. Independently owned and publically traded, Woodward provides products, services, support, and upgrades for any OEM's turbomachinery systems.



XTEND PACKAGING, INC.

2440

21310 Inverness Forest Blvd. Houston, TX 77073 USA PH: 281-784-2262 | FX: 832-827-2176 www.xtendpackaging.com

Intercept Technology products deliver superior, easy-to-use, cost effective, anti-corrosion packaging protection for machinery, spare parts, and finished goods. Intercept prevents corrosion and degradation during lengthy shipping or storage cycles without the use of volatiles, vapors, chemicals or coatings. Developed by Bell Labs, Intercept is green, clean, re-usable and recyclable. Intercept is proven 100% safe for all materials, is available in a variety of styles and sizes, as well as packaging on site for you. Intercept performs around the globe in many applications in the harshest of environments and saves money. Visit us at booth 2044.

Z

ZAHROOF VALVES, INC.

2804

8535 N. Jackrabbit Rd. Houston, TX 77095 USA PH: 713-554-2678 www.zahroofvalves.com

Recip Compressor Valves.

1536

ZENITH EQUIPMENT SERVICES, INC.

P. O. Box 34567 Houston, TX 77234 USA

PH: 281-922-4061

www.zenithpumpservices.com

Zenith Pumps Services: Turnkey Equipment Removal, Redesign, and Installation. Zenith Pumps, is a full service rotating and reciprocating equipment repair facility. As an independent service provider, we supply unbiased quality repairs that meets or exceeds Original Equipment Manufacture's offerings. Our core strengths, field experience and engineering expertise allow us to provide the best possible solutions to tough equipment problems.



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- Quality Control
- Replace Job Cards Manual Forms
- Customer Specifications Advanced Calculations
- Custom Report Generation
- Image & Equipment Capturing

Equipment Management

- Status & Location Tracking QR Code Labels
 - Maintenance
- Documentation
- Equipment Storage

- - Quick Pos

 - Payment Processing

 - Video Help & Tutorials





Mobile Time Clock

- Time Processing
- Dynamic Web Scheduling
- Job Info screens Job & Activity Logs
- Materials Usage & Requisitions
- **GEO** Mapping

Mobile Paper Work



- Dashhoard Charts & Granhs
- Job Tracker



For Whom?

TPS symposia and Free Pass delegates.

Thursday: 10:00 a.m.

Turbomachinery Laboratory Booth #2022

Network with your colleagues during the TPS Marketers Meetup.



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ACE Compressor Services	2901
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Elliott Group	2125
EthosEnergy Field Service	2525
F.W. Gartner Thermal Spraying & Curtiss-Wright	2601
Hankuk Airro	1336
Hanwha Power Systems	2547
Howden	1327
Kaydon Ring & Seal, Inc.	2143
Kobelco Compressors America, Inc.	2240
Lincoln Electric Additive Solutions	3026
Mayekawa U.S.A., Inc.	2813
Metcar	1523
Mitsubishi Chemical Group	2041
Mitsubishi Heavy Industries	1819
National Compressor Services	3019
Precision Machinery Contractors	2634
Premium Alloys	2323
Revak Keene Turbomachinery, LP	2451
Rotating Machinery Services, Inc.	1527
S.T. Cotter Turbine Services, Inc.	1951
Samco Enterprises	1440
Scott Rotary Seals	3014
Southern States Millwrights	2052

Sullair A Hitachi Group Company	2517
T.F. Hudgins, an Allied Reliability Brand	1627
Technogenia	1742
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Kraft Werks Engineering	1619
Regal Rexnord	2335
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Shackelford-Wattner	2115
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Henkel Loctite Corporation	1116
L.A. Turbine	2341
Nikkiso Cryogenic Industry Service	2605
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Camfil Power Systems	1713
CCC (Compressor Controls Corporation)	1935
Elliott Group	2125
Engineering Dynamics, Inc.	1845
EthosEnergy Field Service	2525
Flender-Graffenstaden	2221
	•

Howden	1327
Ideal Electric Company	1813
Kistler Instrument Corp	2802
Kobelco Compressors America, Inc.	2240
Kraft Werks Engineering	1619
KSB SupremeServ	1135
L.A. Turbine	2341
Mayekawa U.S.A., Inc.	2813
Mitsubishi Heavy Industries	1819
Nidec Industrial Solutions	1605
Nikkiso Cryogenic Industry Service	2605
Philadelphia Gear	2416
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REXA, Inc.	1518
Rotoflow, An Air Products Business	2719
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Shaft Earthing Solutions	1502
Southwest Research Institute	2626
TechStar	2348
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Trinity Coatings LLC	2715
TSS Turbine Specialty Services	2641
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Continental Controls	2643

Alpha Laser-US, Inc.	2214
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F.W. Gartner Thermal Spraying & Curtiss-Wright	2601
Kistler Instrument Corp	2802
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MSHS (Formerly Governor Control Systems)	2319
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CTS, Inc.	1501
F.W. Gartner Thermal Spraying & Curtiss-Wright	2601
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Ruthman Companies Pumps	2050
S.T. Cotter Turbine Services, Inc.	1951
Shanley Pump & Equipment	1026
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Engineering Dynamics, Inc.	1845
Kistler Instrument Corp	2802
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SKF Magnetic Mechatronics	2141

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CEROBEAR GmbH	1942
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CEROBEAR GmbH	1942
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Poseidon Systems, LLC	1316
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Shaft Earthing Solutions	1502
TechStar	2348
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Drake Controls	2541
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REXA, Inc.	1518
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RENK Group	1726
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Shaft Earthing Solutions	1502
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Drake Controls	2541
MSHS (Formerly Governor Control Systems)	2319

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EagleBurgmann Industries LP	2427
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EagleBurgmann Industries LP	2427
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Flexaseal Engineered Seals and Systems, LLC	1301
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Peerless PROCORE	2540
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Kraft Werks Engineering	1619
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Celeros Flow Technology	1436
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Hebei Metals & Minerals Corp. Ltd	1034
Henkel Loctite Corporation	1116
ITT Industrial Process	2611
KRAL-USA, Inc.	1334
KSB SupremeServ	1135
Leistritz Advanced Technologies Corp.	1126
LEWA-Nikkiso America, Inc.	1127
Oerlikon	1125
Rotech Pumps USA Inc	1222
Ruthman Companies Pumps	2050
Thomas Pump & Machinery	1027
Thordon Bearings Inc.	1711
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Burckhardt Compression (US) Inc.	1741
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Hammelmann Corporation	1323
KSB SupremeServ	1135
Leistritz Advanced Technologies Corp.	1126
Nikkiso Cryogenic Industry Service	2605
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CONSULTING - MAINTENANCE & RELIABILITY	
Becht	2701
CCC (Compressor Controls Corporation)	1935
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Hermetic Pumps Inc.	1427
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SoftlnWay Inc. TurboTides, Inc. DATA MANAGEMENT TurboTides, Inc. DESIGN AND ANALYSIS Concepts NREC Simerics, Inc. SoftlnWay Inc. TurboTides, Inc. SoftlnWay Inc. TurboTides, Inc. Vortex Pipe Systems FINITE ELEMENTS ANALYSIS SoftlnWay Inc. INDUSTRIAL DISTRIBUTION ProMRO Cloud ERP by Clients First MAINTENANGE AND RELIABILITY Bently Nevada Hydrocarbon Processing Predicta4 ProMRO Cloud ERP by Clients First PIPE FLOW ANALYSIS Applied Flow Technology Simerics, Inc. Vortex Pipe Systems PROGUREMENT PROGUREMENT	GFD	
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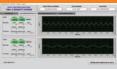
Shaft Current & Voltage Monitors

FOR NON-HAZARDOUS AREAS





Remote View and Analysis Software









ABOUT THE TURBOMACHINERY LAB



The Turbomachinery Lab, a center of the Texas A&M Engineering Experiment Station (TEES), conducts basic and applied research into important problems of reliability and performance of turbomachinery — rotating machinery that extracts or adds energy to fluids. That's everything from the classic Dutch windmill to the space shuttle's main engine turbopumps and compressors that move natural gas through the distribution system.

VISIT turbolab.tamu.edu

Email Info@turbo-lab.tamu.edu



The Turbo Lab, established in 1982, continues to address the needs of users and manufacturers of turbomachinery and pumps. The Turbo Lab continues Texas A&M University's land-grant charter and tradition of attention to industry needs in three areas:

- Basic & Applied Research
- Undergraduate and Graduate Education
- Continuing Education & Professional Development

The Turbo Lab offers graduate engineering coursework through Texas A&M's Department of Mechanical Engineering, and provide continuing education opportunities to users of turbomachinery and pumps all over the world. Opportunities include short courses led by world-renowned researchers and original equipment manufacturers and users, as well as highly-regarded symposia in Houston, Texas, and Southeast Asia.

The Turbo Lab also boasts a unique opportunity for turbomachinery developers and users to find answers to important questions about performance and reliability with the Turbomachinery Research Consortium (TRC).

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E ERGY Tech Review

Energy Tech Review aggregates the brightest of minds, opinions, analyses, the latest technologies, and the most mind-boggling arguments about the critical issues that exist in the energy sector.





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TURBOMACHINERY LABORATORY

FEXAS A&M ENGINEERING EXPERIMENT STATION



DR. OLIVIER MATHIEUMechanical Engineering



DR. ALAN PALAZZOLO Mechanical Engineering



DR. LUIS SAN ANDRES
Mechanical Engineering



DR. JAMES (CHRIS) THOMAS Mechanical Engineering



DR. LESLEY WRIGHT Mechanical Engineering



Join TRC today

The Turbomachinery Research Consortium (TRC) is an exclusive organization of major turbomachinery developers and users who have united with the Turbo Lab to find answers to important questions about turbomachinery performance and reliability through cutting-edge research.

Eric Petersen, Director Debbie Maggs, Program Manager

Expertise at your fingertips

TRC members have exclusive access to XLTRC2, a suite of high-speed, experimentally verified and user-friendly codes for executing a complete lateral and torsional rotordynamic analysis of rotating machinery, including pumps, compressors and turbines. XLTRC2 is bundled with 25 or more examples of rotordynamic analysis, including rotors for compressors, pumps and gas turbines. Each model features distinctive bearing/ seal support conditions and displays unique characteristics of rotordynamic behavior.

Visit us in Booth 2022!

FOR MORE INFORMATION turbolab.tamu.edu/trc

979-845-7417 trc@turbo-lab.tamu.edu







TRC Members 2022-2023





























































GENERAL INFORMATION

EXHIBITION

In addition to our technical sessions, we encourage you to join us for our outstanding product show. Our exhibition will provide you the opportunity to engage with world-class technical personnel and view the latest in industry technology and full-sized equipment displays.

The exhibition for paid attendees will take place in Exhibition Halls C, D, and E. The halls will be open during the following times:

- Tuesday
 Noon 2 P.M.
- Wednesday
 Noon 2 P.M.

FREE PASS HOURS - EXHIBITION

Free Pass registration required.

- Tuesday
 2:30 P.M. 7 P.M.
- Wednesday
 2:30 P.M. 6:30 P.M.
- Thursday9:30 A.M. Noon

WELCOME ADDRESS

The welcome address is scheduled for Tuesday, from 8 - 8:35 A.M. in the General Assembly Theatre C in the George R. Brown, Level 3. This year's speaker is Dr. Eric Petersen, Director of the Turbomachinery Laboratory. Admission is free and open to the public.

LUNCHEONS

Badge required, not open to Free Pass

Lunch will be served on Tuesday and Wednesday in Exhibit Hall D. Admission is granted to paid attendees, exhibitors and press. The one-day symposia registration fee includes admission to lunch for that day.

TEX-MEX BUFFET

Badge required, not open to Free Pass

The Tex-Mex Buffet is scheduled for Tuesday, 7:30 P.M. – 9 P.M. in the Hilton Ballroom of the Americas A. Admission is granted to paid attendees, exhibitors, and press.

BANQUET

Badge required, not open to Free Pass

The Banquet is scheduled for Wednesday, 7:30 P.M. – 9 P.M. in the Hilton Ballroom of the Americas A. Admission is granted to paid attendees, exhibitors, and press.

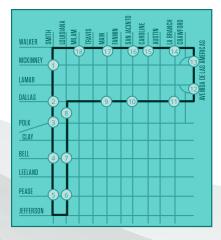
Doors open at 7:15 P.M. No one admitted after 7:45 P.M.

GREENLINK BUSES

Free transportation in Downtown Houston

Seven buses operate in Downtown Houston Monday - Friday, 6:30 A.M. to 6:30 P.M., about 7-10 minutes apart. The route spans 2.5 miles with 18 stops and connects Metro transit stops, the convention corridor, hotels, restaurants, shopping and entertainment.

Greenlink buses stop at popular downtown destinations including GreenStreet, George R. Brown Convention Center, Discovery Green, Main Street Square, City Hall and the Central Library and connects to Metro Park & Ride services and to the Main Street MetroRail line. The buses run on Compressed Natural Gas (CNG). making them a cleaner transportation alternative. Features of the buses include a streamlined, modern design, low-floor access, perimeter seating, high-quality air conditioning, 28-seat capacity, a front-mounted bike rack. Buses are ADA compliant.



SYMPOSIA PROCEEDINGS

The Turbomachinery Laboratory is proud to present the full technical program for this 51st Turbomachinery and 38th Pump Symposium. These Proceedings are included as part of the full and one-day symposium registration fee. To access the Proceedings, see the QR code located on the flyer in your Symposia bag, or visit the registration room for another copy.

CONTINUING EDUCATION

Units/profession development hours (CEU/PDH)

The CEU/PDH is the nationally recognized unit designed to provide a record of an individual's continuing education achievements. Symposia attendees earn .45 CEUs/4.5 PDHs Tuesday and Wednesday and .3 CEUs/3 PDHs Thursday or 1.2 CEUs/12 PDHs for full symposia. Short Course attendees can earn .6 CEUs/6 PDHs.

In order to receive a CEU/PDH certificate, you must complete and return the appropriate CEU/PDH request form to the Registration Counter during the symposia or via email to the CEU coordinator, debbie@turbo-lab.tamu.edu. A certificate will be prepared and emailed to participants 4-6 weeks after the symposia.

NOTE:

Registration is verified prior to issuing certificate.

GENERAL INFORMATION

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AMERICANS WITH DISABILITIES

act amendments act of 2008 (ADAAA)

The Texas A&M University System welcomes you to the Turbomachinery & International Pump Users Symposia. If you require an accommodation under the Americans with Disabilities Act (ADA), please contact Jeannie Galindo at igalindo@ turbo-lab.tamu.edu or 979-862-1012 if you are an attendee, or Exhibitor Services at exhibit@turbo-lab. tamu.edu or 979-458-8878 if you are an exhibitor. Early notification is encouraged, and a request two weeks before the event you plan to attend will facilitate the provision of a reasonable accommodation.

CANCELLATION POLICY

Should symposia and/or short course cancellation be necessary, written refund requests (by fax or mail) must be received by the Turbomachinery Laboratory by midnight, August 18, 2022 for refund of registration fees. There will be a \$50.00 USD administrative and banking fee charge to cancel registration. Substitutions are encouraged. We do request that substitutions be made in advance, as substitutions made onsite at the symposia will result in registration delays.

Late cancellations (after the cancellation date) will be reviewed on a case-by-case basis for personal hardships (death, injury, or illness of the attendee or an immediate family member). Refunds may also be extended for natural disasters (hurricanes, etc.) and national emergencies (9/11, etc.).

The TL does not refund for business decisions (after cancellation date) by the attendee's employer such as: job reassignment, plant emergencies, etc. However, we encourage substituting another employee so the attendees' company receives the benefit of training. In the event of a "no-show" cancellation, short-course/Symposium materials will be forwarded to the absent attendee.

The State of Texas does not allow the TL to extend credit to individuals or companies. Therefore, we cannot apply registration fees for a missed course to another subsequent course. The TL reserves the right to cancel any short course or symposia and return all fees in the event of insufficient registration. We reserve the right to cancel due to unforeseen circumstances. The TL will not be responsible for any losses incurred by the registrants, including but not limited to airline cancellation charges or hotel deposits.

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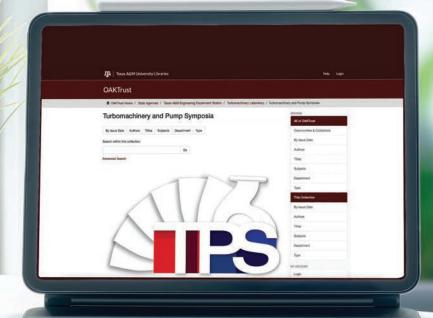
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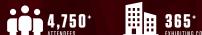




52 ND TURBOMACHINERY & 39TH PUMP SYMPOSIA

SHORT COURSES: SEPTEMBER 25, 2023 | SYMPOSIA: SEPTEMBER 26-28, 2023

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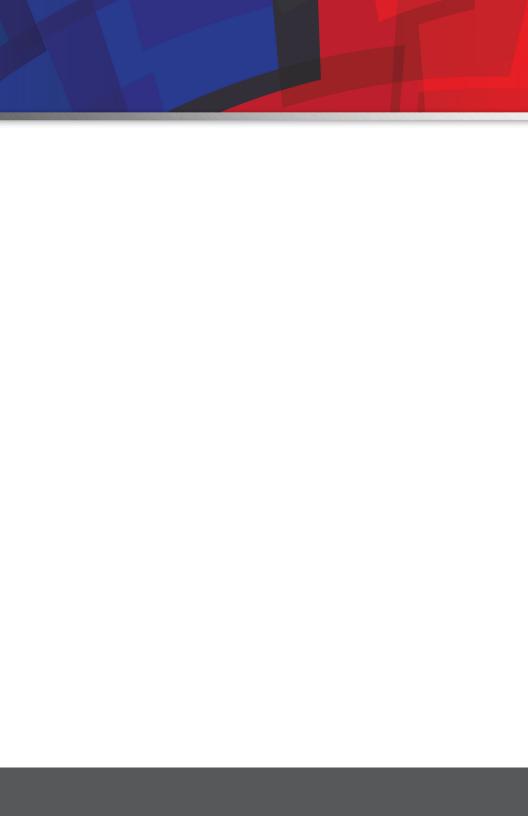






51ST TURBOMACHINERY & 38TH PUMP SYMPOSIA

ADDENDUM 2022



ADDENDUM SCHEDULE

HOSPITALITY SUITE

INGERSOLL RAND

Ballroom of Americas A Monday, Sept 12 from 6:00 p.m. – 10:00 p.m.

INNOVATION PRESENTS STAGE

BURCKHARDT COMPRESSION AND ARKOS FIELD SERVICES

Greg Griggs,

Burckhardt Compression and Arkos Field Services "From Health Check to Zero Emission"

> Wednesday, September 14, 2022 3:30 p.m. – 3:50 p.m.

ADDENDUM EXHIBITING COMPANIES



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2820

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B

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F

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KRMS is an international symposium for the sharing of relevant information of field experience skills, exchanges of developing technologies, development of skills to produce opportunities to cooperate with attending 'Rotating Machinery' field experts. Over 300 experts of the industry from all corners of the world are expected to converge for the Korea Rotating Machinery Symposium in 2023. The event is renowned for boosting engineering abilities and skills in the field of the rotating machinery industry, making contributions to improve the equipment, operation and maintenance of rotating machinery.



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Categories: Auxiliary Equipment – Vibration measuring, monitoring, analysis; Design and Analysis Support – Pumps; Design and Analysis Support – Turbomachinery; Machinery Services – Analysis; Machinery Services – Vibration Analysis

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THANK YOU

TO OUR WOMEN OF TPS LUNCHEON PANELISTS:

Jane Ploeger,

Head of Technology and Innovation, Siemens Energy

"Using Your Role to Lessen Gender Disparity in Engineering"

Charli Matthews.

Founder and CEO, Empowering Pumps and Equipment and Empowering Women in Industry

"Embracing your Feminity in a Male-Dominated Workplace"

Elizabeth Bramhall,

Manager General Business Development, Constellation

"10 tips from Women working in male-dominated industries"

Sarah Farnand,

Global Business Manager – New Equipment, Air Products

"Reimagine what's possible! Increasing female participation in engineering"

