

Power Transmission Engineering

Engineering Showcase 2016

One of our goals at *Power Transmission Engineering* is to help you understand, identify and select the best technology for your mechanical power transmission or motion control applications. With every project, you have to decide which components to use, and which suppliers, based on functionality, quality and price. We aim to help you make those decisions *informed* by providing the latest information on current technology, especially when it comes to mechanical components.

With that in mind, we are pleased to present our third annual Engineering Showcase, a celebration of some of the leading products and companies in mechanical power transmission. In the pages that follow, you'll find examples of engineering excellence and technological know-how in the field of gears, drives, couplings, machine parts and other mechanical components.

This guide is meant as a complement to our annual Buyers Guide and our permanent online directory of suppliers at powertransmission.com. In this special section, we have the opportunity to go into more depth in describing the products and capabilities that make each of these suppliers unique.

So please browse through the section and read about the latest these suppliers have to offer. If you have an upcoming project that matches their manufacturing capabilities, we're confident that giving one of them the opportunity to bid will be well worth your efforts.



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Celebrating 55 Years of Providing Product Solutions

SDP/SI - Stock Drive Products/Sterling Instrument provides mechatronic based design, engineering and manufacturing services for industrial and commercial applications. We work closely with our customers to ensure the best solutions from prototype to production.

For 55 years design engineers have depended on SDP/SI for high-quality components, subassemblies, and engineering expertise. As a company founded and managed by engineers we understand and respond to the developing needs of our customers better than anyone. Over 130,000 inch and metric dimensioned components are available as standard catalog items for fast turnaround. Off-the-shelf components include: precision gears, pulleys, timing belts, clutches, brakes, bearings, couplings, and more. When a standard product won't meet your requirements we can provide alternative solutions through custom design and manufacturing. Our engineering and manufacturing teams will partner with you throughout the entire process. By providing design, development,

manufacturing, assembly, and testing in one location we can ensure the end product will meet your expectations.

We are dedicated to manufacturing high-quality machined parts, molded components, precision gears and gear

assemblies. Our commitment to quality results in superior products. As a precision gear and pulley manufacturer, we excel in every aspect of the process: milling, turning, grinding, drilling, and gear cutting. An on-site ISO Class 7 cleanroom is used for assembly and testing. NADCAP and customer approved facilities are used for heat-treating, plating, NDT, and painting. We machine in many materials including stainless steel, aluminum, plastic, brass, bronze, steel alloys, and titanium.

Our Credentials Include:

- ISO 9001:2008 + AS9100C Certified
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- Boeing BQMS Certified
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R+W Coupling Technology

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R+W strives to be the best coupling manufacturer worldwide with its extensive array of customizable precision and industrial couplings and torque limiters. An ever expanding product line helps provide the optimal solution for any application and industry.

It's recent expansion of the industrial torque limiter and durable disc pack coupling series is an example of how R+W adapts to an ever changing demand for high performance drive technology and overload protection. When it comes to couplings for precision motion control, R+W's expertise and hands-on experience is second to none. For over 25 years this company has innovated new coupling designs and improvements that have become industry standards in many fields. A strong focus on customization allows R+W to create unique solutions for any application, while its ever-expanding stocking program can meet fast delivery requirements.

R+W's goal is not only to meet customer expectations, but to consistently surpass them. A team of engineers and motion technology experts assists customers with even the most complex coupling applications and can create a custom design in just a matter of days. Find out what the coupling technology leaders can do for you and get the best connection worldwide.

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Schaeffler Engineering: Greater Than the Sum of Our Parts

When it comes to bearings, Schaeffler, together with our INA and FAG brands, has always been at the forefront of technological innovation. Industry firsts - such as the development of the needle roller & cage assembly, or the groundbreaking ball grinding machine that is commonly regarded as the foundation of the entire rolling bearing industry - have earned Schaeffler a unique distinction among the world's great bearing companies. With over 84,000 employees working in approximately 170 locations in 50 countries, Schaeffler is one of the world's largest technology companies in family ownership.

SCHAEFFLER



In addition to rolling bearings for practically any application, linear bearings and guidance systems are also a vital part of Schaeffler's product portfolio. Unrivaled in scope and versatility, Schaeffler's linear product lineup ranges from shafts with linear ball bearings and monorail guidance systems to sophisticated actuators with drives and control systems, plus special coatings and every conceivable accessory.

But that's only the start. Schaeffler's linear portfolio is based on a modular concept that goes far beyond mere components. We can design a complete system solution tailored to the customer's specific application - from large gantry robots to intricate circuit board inspection systems. In fact, many of our linear guidance systems started out as solutions to customers' needs! Case in point: Schaeffler's ingenious H-Bot XY positioning system.

Sometimes, of course, a Schaeffler solution comes about because a customer's needs were not being met by the conventional standard. Such is the case with Schaeffler's innovative differential roller screw. Within the pantheon of mechanical/linear drive systems, the screw category has been limited to lead screws, ball screws and roller screws. Until now, that is. In response to a customer's desire for a solution that better addressed its ambitious price-performance target, Schaeffler recently developed the differential roller screw: a new option that offers the high forces of a traditional roller screw, but at a price point closer to a ball screw.

While innovative products make up the heart of Schaeffler's offerings to our customers, service represents the soul of what we do. Because when it comes to linear guidance systems, Schaeffler has all the pieces; you only have to supply the puzzle. Together, we'll create the perfect linear solution... yours.



Smalley Steel Ring Company

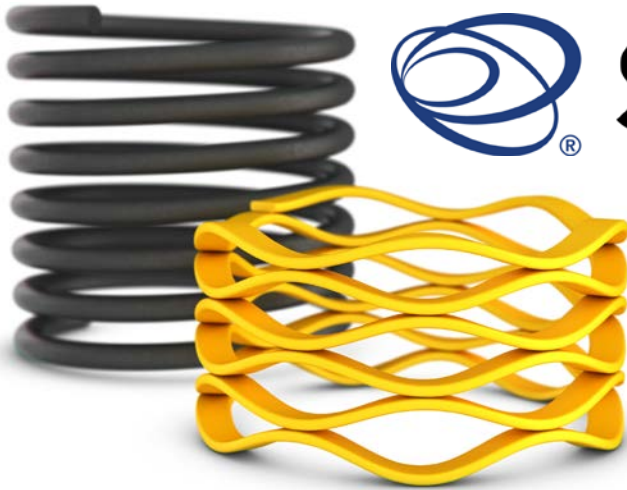
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SMALLEY

Founded over 50 years ago, Smalley Steel Ring Company has evolved to become the world leader in the manufacturing and development of Spirolox® Retaining Rings, Constant Section Rings and Wave Springs. Smalley has led the way in introducing state of the art products and continues to lead the way in innovations for the future.

The Smalley product line consists of 10,000 standard parts stocked in carbon and stainless steel. When time is of the essence, Smalley's No-Tooling-Cost™ edgewinding manufacturing process allows for fast prototyping and economical production of specialty wave spring and retaining ring designs. The scrapless process is ideal for exotic alloys including Inconel, Elgiloy, and Titanium.

Smalley is the exclusive manufacturer of Spirolox Retaining Rings. Spirolox Rings have no ears to interfere with mating components in assemblies. The unique Spirolox design simplifies your assembly process by making it easy to both insert and remove the ring without any tooling. Spiral rings offer a 360° retaining surface and are interchangeable with ordinary snap ring grooves.

As the originator of the Crest-to-Crest Wave Spring, Smalley has a state of the art offering of wave springs that allow for a space savings of up to 50% compared to conventional coil springs. By reducing spring operating height, wave springs also produce a decrease in the spring cavity. With a smaller assembly size and less material used in the manufacturing process, a cost savings is realized.

Free CAD downloads and a staff of engineers available for design consultations provides our customers with a full range of resources to ensure their application contains the most cost-effective solution possible. With offices throughout the globe, Smalley is able to offer customers worldwide unprecedented service and quality.



Smalley is certified to ISO 9001, ISO/TS 16949, AS 9100C and ISO 14001.

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Established in 2011, Rave Gears has built a brand-new world-class engineering and manufacturing facility from the ground up. From the very beginning our goal was to provide the very best aerospace quality gears on time and at a fair price. Rave Gears has accomplished this goal by investing in state-of-the-art equipment and hiring experienced, talented, and dedicated people.

Being brand-new gives us a tremendous advantage. New equipment coupled with highly experienced people allows us to increase efficiency and quality. The kinds of machines that Rave Gears buys hold very tight tolerances, and they're capable of performing processes that, five years ago, were only in the development stage. Not captive to antiquated machines and processes; we are believers in vacuum carburizing and gas hardening, which provide excellent repetition of quality with minimal distortion.

Today, we produce the highest quality spiral bevel, hypoid, spur, and helical gears available. We also offer precision CNC machining, prototyping, reverse engineering and other ancillary services. We are ISO 9001 and AS9100 certified and driven to live up to our motto; "Talent and Technology Driven."

Our current customers include Bell Helicopter, Rolls Royce, Robinson Helicopter, Wrightspeed and several NASCAR racing teams.

FOR MORE INFORMATION about Rave Gears including equipment, technology, and capabilities, go to www.ravegears.com.



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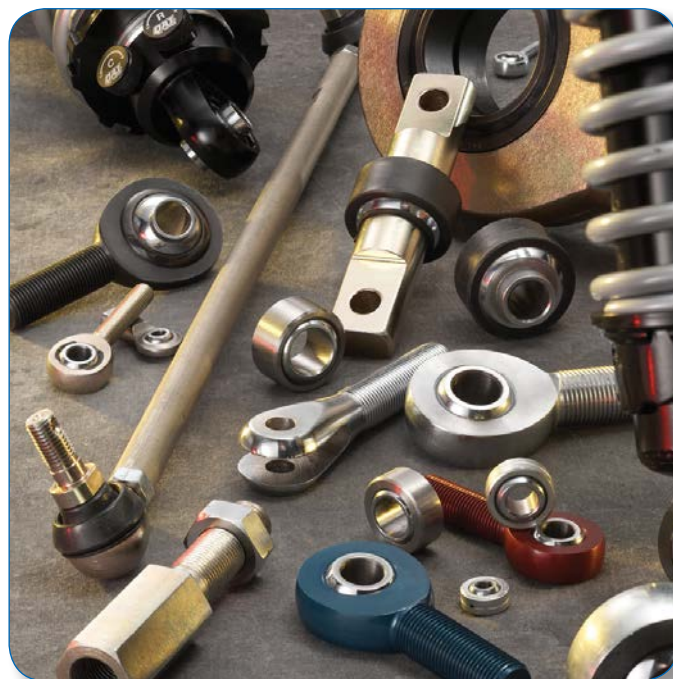
QA1

QA1 is the #1 name in rod ends and spherical bearings, with over 1,500,000 units sold annually. Founded in 1993, QA1 built its foundation on quality and affordability being the number one priority. QA1's inch and metric rod ends and spherical bearings feature precise tolerances for quality and durability. With over 6,500 SKUs on the shelf and 99% same-day shipping, you are sure to find exactly what you need and get it quickly.

QA1's quality system is ISO 9001:2008 certified. With a wealth of engineering and manufacturing expertise on staff, our products are designed, built and tested to ensure consistent quality, ultimate reliability and unbeatable performance. If you need custom linkage products, QA1's complete in-house design and engineering team and state-of-the-art manufacturing facility are dedicated to making it happen. QA1 is also a global provider of shock absorbers, suspension components, ball joints, clevises, rod eyes, jam nuts, spacers, custom linkage assemblies and more!



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Gear Technology

Gear Technology is where the world turns for information about gears and gear manufacturing. We reach a broad-based audience of gear industry professionals involved with every phase in the life of gears and geared products, from conception to design, from design to manufacturing, from manufacturing to inspection, from inspection to purchase and from purchase to end use.

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