

# Gear Expo 2017 Booth Previews

All you need to know about who's there.

Alex Cannella, Associate Editor

Gear Expo 2017  
October 24-26,  
Greater Columbus Convention Center,  
Columbus, OH  
[www.gearexpo.com](http://www.gearexpo.com)



## AA Gear & Manufacturing Booth 937

AA Gear & Manufacturing, Inc. is a vertically integrated batch manufacturer of complex splined shafts and helical/spur gear components produced out of carbon steel alloys servicing the construction, agricultural, mining, automotive, industrial, marine, petrochemical and on/off highway diesel engine markets in North America and throughout the world. They take pride in their manufacturing ingenuity to process these complex components in the most efficient processing steps through finished gear profiles utilizing form and generating gear teeth grinding capabilities.



AA Gear's in-house capabilities allow them to get involved with projects upfront as soon as the proof of concept phase and take them through serial production launch and support. They also assist in manufacturability assessments to support their customers in designing the most optimal components for their rigorous applications.

Whether it's a bar stock or forging application, AA Gear provides complete processing services for your components, including: CNC turning and milling, hobbing, shaping, shaving, gear chamfering, spline rolling, broaching, gun drilling, wire EDM, CNC jig grinding, ID/OD grinding, form and generating gear teeth grinding, vertical honing, lapping and light assembly. They also utilize two labs for support metrology inspections that include Sigma 3 and Klingelnberg Gear and Shaft Analyzer Equipment. This gives AA Gear the ability to produce gears to AGMA 2000 Q-12/AGMA 2015 A-4 quality levels.

### For more information:

AA Gear & Manufacturing, Inc.  
Phone: (517) 552-3100  
[www.aa-gear.com](http://www.aa-gear.com)

## Arrow Gear Booth 1201

Arrow Gear has been manufacturing precision spiral bevel, straight bevel, zerol bevel, curvic couplings, spur, helical and internal gears and gearboxes for 70 years. Arrow Gear serves many different industries, including aerospace, government, mining, oil/gas, food/medical, agriculture, power tools and machine tools to name a few. While their name is synonymous with the aerospace industry for both planes and helicopters, they have been serving several of the industrial markets for many years.



Arrow Gear has a state of the art, 145,000 manufacturing facility with the latest technology in cylindrical and bevel gearing. Remaining on the forefront of the precision gear industry requires continual reinvestment in advanced technology. Arrow Gear has a longstanding tradition of integrating the latest technology to enhance productivity and competitive pricing while offering the highest quality available. As a result, Arrow Gear is among the most technically advanced facilities in the world for the manufacture of high precision gears.

In an effort to expand Arrow Gear's product range, they have partnered with a European supplier which allows them to offer gears to many additional industries. These industries include robotics, textile, railway, printing, pumps, forklifts and antennas. Stop by the booth to learn more about Arrow Gear's new look, new machines and new products!

### For more information:

Arrow Gear Company  
Phone: (630) 969-7640  
[www.arrowgear.com](http://www.arrowgear.com)

## ASI Drives Booth 630

ASI Drives is a custom manufacturer of gear drives for battery-powered vehicles and equipment. They specialize in machines that carry between 400 and 2,000 pounds, but have designed products for machines that carry between 50 and 6,000 pounds and can produce between 50 watts and 1.5 kilowatts. ASI has decades of experience in gear design. They cut all their gears in-house to their specifications. They can streamline the engineering process by solving your engineering problems, saving time on your product launch cycle. They have a full understanding of the entire process, from sketches to production. ASI strives to be as flexible as possible in order to meet your specific needs.



ASI will be displaying its new shop bot, which will demonstrate their capabilities to design and build an AGV for your factory floor. The bot has a custom-built frame, with two wheels designed to minimize wear and one castor wheel for increased mobility. It's been programmed to follow a path laid out by panels on the ground. ASI will also be bringing a number of product samples to Gear Expo. We'll have products from our families of transaxles, wheel drives and right angle drives, along with some custom designs.

**For more information:**

ASI Drives  
Phone: (215) 661-1002  
[www.asidrives.com](http://www.asidrives.com)

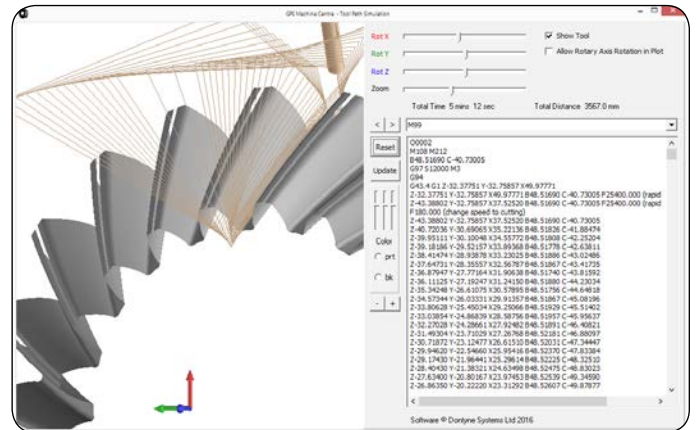
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## Dontyne Systems Booth 123

Dontyne Systems continues to develop an ideal platform for integrated gear design and manufacture through new and improved functionality to the *Gear Production Suite (GPS)*.



Simulations for hobbing, continuous grinding with dressing, shaping, shaving and profile grinding have been successfully implemented in many companies now, and have been continually improved to produce high correlation with production. Accurate modeling of the processes allows for automatic tool design, including assessment of the effects of tolerancing, before cutting metal. This gives more confidence in right-first-time production for reduced waste of time and resources. The technology has been proven to give accurate results using both standard gear production equipment and flexible 5-axis production systems. Utilizing multiple operations and existing tooling in a multi-axis machine makes it ideal for prototyping and small batch production including bevels. GPS design functions enable designers to optimize tooth contact in our LTCA model before machining. The interface to these machines now includes exporting G-code to reduce setup time.

Trials have shown interfacing to dedicated gear inspection and CMM units further improves production efficiency and quality. Measurement data can be used to edit axis position for accurate surface generation or the tool surface itself including forming processes such as forging and injection moulding.

Integration of the software enables constant monitoring and correction of production, which could be automated. Considerable savings in time and cost are possible. Dontyne will be demonstrating some examples of their ability to integrate their design tools with manufacturing from Mazak and inspection equipment live at Gear Expo Booth 123. They look forward to discussing how their software can help improve production efficiency and flexibility with your existing or developing production systems.

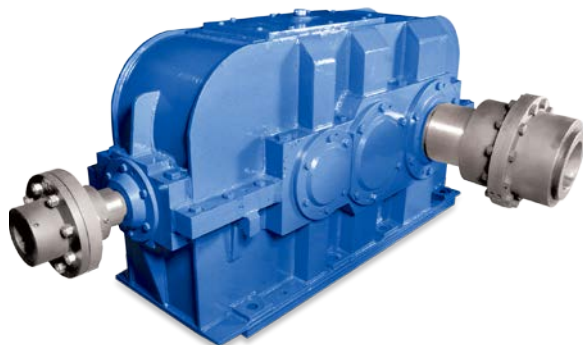
**For more information:**

Dontyne Systems Limited  
Phone: +44 (191) 206-4021  
[www.dontynesystems.com](http://www.dontynesystems.com)

**Esenpro/Essential Power Transmission**

**Booth 745**

Esenpro, a brand of Essential Power Transmission Pvt. Ltd., is one of the leading manufacturers and exporters of industrial gearboxes and open gears. They are in the business of designing, manufacturing and servicing gearboxes and gears. Esenpro has multiple institutions globally in the steel, cement, plastic, mining, power, overhead cranes, port and chemical industries. They have in-house designing, machining, gear grinding, metrology, calibration and heat treatment facilities.



Esenpro offers its products both in standard and customized categories. In particular, Esenpro's revenue generator is its customized gearbox, which is growing year on year, providing it a definite edge over its competitors. Esenpro standard gearboxes are helical gearboxes, bevel helical gearboxes, worm gearboxes, crane duty gearboxes, cooling tower gearboxes, extruder gearboxes, rolling mill gearboxes and

aerator gears and gear assemblies. Also, open gears as per customer design and special gearboxes for crane, power, steel, paper, and mining industries.

Esenpro also undertakes reengineering of existing/old gears and gearboxes for any plant and machinery to enhance their capacity to withstand higher speed, feed and load within the existing mounting dimensions. Esenpro also designs and supplies drop in replacement gearboxes. These gearboxes exactly replace the old gearbox without an inch of modification to the existing foundation. Esenpro also has a separate engineering team to develop planetary gearboxes for steel, power, sugar, material handling and mining.



Esenpro has always given priority to quality. Steel round bars and blanks are sourced from reputed forging companies in India. The material undergoes a series of quality checks to

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**Spiral Bevel Gearbox**



**Hollow Shaft**



**Solid Shaft**

**FEATURES**

- 1:1, 2:1, 3:1
- 2 or 3 Shaft Options
- 14-32 mm Shaft
- < 6 Arc-min Backlash
- Adapt to Servo or Stepper Motor
- Hollow Output
- Same or Counter Rotation
- Zero Maintenance
- Stainless and Carbon Steel

**Zero Backlash Couplings**



**Jaw**



**Disc**



**Encoder Disc**

**FEATURES**

- 0.4 mm – 60 mm Bore Range
- 0.4 – 540 Nm
- 3000 - 10,000 RPM
- Metric/Inch Bore Sizes
- Competitor Drop-in
- Many Different Sizes
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ensure the gearbox is reliable. The gearbox housing is provided in either CI or M.S Fabricated. Gearbox housings are duly stress relieved and shot blasted. Other bought out materials such as bearings and oil seals are directly procured from reputed manufacturers. Esenpro's machine shop is equipped with the latest CNC machines for machining, boring, drilling, planning and grinding operations. They are also commissioning our heat treatment facility by the end of 2017.

**For more information:**

Esenpro  
Phone: +91-9920828403  
www.esenpro.com

**Exsys Tool  
Booth 1704**

As a long time Eppinger supplier, Exsys Tool offers a line of high-quality Eppinger Spiral Bevel Gearboxes. Eppinger's BT (bevel torque) and BM (bevel maximum torque) compact spiral bevel gears deliver high torque and maximum efficiency for gear applications that require extreme reliability and variability at speeds over 1,000 rotations per minute, as is the case for vehicle differentials.



Each of these bevel gearbox types offer minimized tooth clearance and optimal transmission properties via precision axes and bearing seats combined with Gleason bevel gears that can withstand high loads.

The single-component steel housings for these bevel gearboxes feature mounting threads on all sides to ensure stable attachment in a variety of installation positions. The heavy-duty bevel gears inside these housings offer high-transmission precision and reduced stress on the bearings. A friction-locked, zero backlash connection of the crown gears on the drive shaft reduces the mass of the gearing component.

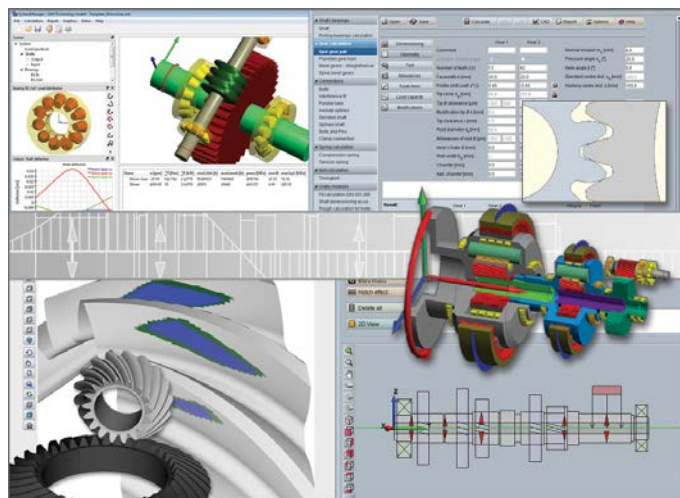
Both BT and BM gearboxes come in solid or hollow shafts in standard and custom designs. BT-type models are available in seven sizes with a transmission ratio of  $i = 1:1$  to  $5:1$ , while BM-type models are available in five sizes with a ratio of  $i = 1:1$ .

**For more information:**

Exsys Tool  
Phone: (800) 397-9748  
www.exsys-tool.com

**GWJ Technology  
Booth 944**

Focusing on mechanical engineering, GWJ Technology stands for high-quality products and professional software development for mechanical engineering to support engineers and designers in their daily work. The GWJ product range of innovative calculation software is wide — from standard software for classical machine elements with 3D CAD integration modules to the determination of whole systems up to a complex special software for 5-axis milling of gears. There are common features that all GWJ solutions share: intuitive design, sleek interface, ease of use and suitable applications for all users from beginner to very advanced. GWJ is constantly working on software enhancements and adding new features to the system in order to keep the applications up-to-date. They are also committed to providing high-quality customer services, including engineering services and workshops.



Several of GWJ's various software suites will be on display. eAssistant is a web-based calculation software for mechanical engineering. The software allows for professional calculation, design and optimization of machine elements including shafts, bearings, cylindrical gears, bevel gears, shaft-hub connections plus many more. The suitable 3D CAD plugins offer a great way to connect calculation and design. 3D CAD models can be automatically created with just a mouse click and the design table with all manufacturing details can be placed on the manufacturing drawing.

For more than 30 years, the *TBK* software has been a widely accepted calculation software and is being successfully used by many engineers worldwide in the widest range of sectors. Gear manufacturing is one of the key applications. The software is used in the steel and cement industry, open cast mining, wind turbines and even for Formula 1 engines. The high-quality calculations are based on generally accepted calculation methods (DIN, ISO, VDI, AGMA, ANSI, etc.).

*SystemManager* is a true software application for complete systems of machine elements. The software is a coupled FE calculation of multi-shaft systems with gears as non-linear coupling elements. *SystemManager* runs as a desktop application, making it possible to configure and calculate entire



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systems with just a few mouse clicks. The application ranges from simple to complex systems, e.g. multi-stage gearboxes, shift gear transmissions or different types of planetary gear trains. *SystemManager* allows the import of 3D housings as STEP files. The software meshes the parts automatically to consider deformation and stiffness of the housing throughout the system. A further extension of the 3D elastic parts function is the support of planet carriers and imported shafts. Planet carriers can be imported as CAD models or be defined parametrically; various basic designs are available for the parametric planet carriers.

The *TBK Manufacturing Suite* is a powerful software especially designed for calculating the real 3D geometry of gearings. This geometry provides the basis to manufacture cylindrical and bevel gears in conjunction with multi-axis machining centers. The software calculates the tooth form based on a mathematical simulation of the manufacturing process analogous to traditional manufacturing on gear cutting machines. The *TBK Manufacturing Suite* is one of the world's leading and award-winning software products in this field.

### For more information:

GWJ Technology  
Phone: +49 (0) 531 129 399 0  
www.gwj.de

## Innovative Rack & Gear

### Booth 615

Innovative Rack & Gear will be displaying their newest addition to their current gear rack capabilities — Gleason-Saikuni's HR-2000: a CNC rack milling machine capable of hard-milling rack teeth after heat treat with hardness of up to 65 Rc and producing tooth finishes and accuracies comparable to rack grinding. Also on display will be some of the sample work they have done for their customers in various industries, including the automation, aerospace, computer, construction, mining, oil, defense, machine tool, medical and repair industries.

Innovative Rack & Gear's capabilities include straight and helical racks in various materials, both metric and American standards as well as unique tooth configurations, from fine pitch (254 D.P./0.1 Module) to coarse pitch (0.50 D.P./50 Module), up to 32" (812 mm) face width and up to 288" (7300 mm) lengths\* (\*through resetting). They also provide secondary operations via their CNC Machining Centers. Their Wenzel CMM is our newest addition this year to their current gear rack inspection capabilities.

### For more information:

Innovative Rack & Gear Co.  
Phone: (630) 766-2652  
www.gearacks.com

## McInnes Rolled Rings

### Booth 1248

McInnes Rolled Rings specializes in seamless rolled rings from 4"-144" diameter and forged discs up to 54" diameter in carbon, alloy and stainless steel. Their ISO 9001, AS9100 and ABS certified plant in Erie, Pa. combines the latest in ring rolling technology with experienced professionals, resulting in the best value and the fastest deliveries in the industry.

### For more information:

McInnes Rolled Rings  
Phone: (800) 569-1420  
www.mcinnesorledrings.com



## Mijno Precision Gearing

**Booth 231**

Mijno's line of custom and standard low-backlash planetary gearheads has achieved max backlash from 1 to 30 arc-mins and ratios from 3 to 1000/1. In-line, right-angle and "rotating flange" gearboxes which according to Mijno remain second-to-none in stiffness, quietness, reliability and long life and are capable of up to 12,000 Nm of torque. They also manufacture ground rack and pinion (linear gearing) as well as build-to-print metal and plastic components with gear features. Custom gearboxes are Mijno's specialty, with products available worldwide.

As a world leader and custom manufacturer of planetary gearheads, low-backlash reduction power transmission as well as racks and pinions, they have the solution for your servo-application. If they don't then they will custom design and build it for you. In addition to custom designs, Mijno can also manufacture according to your prints. Mijno's cataloged gearboxes and gearheads can be applied with a large variety of electric servomotors: however, some choices can optimize your application.

If it's high quality gears, internal or external in small to medium quantities, Mijno's expertise of 90 plus years will fulfill your requirements.

**For more information:**

Mijno Precision Gearing USA  
[www.mijno-usa.com](http://www.mijno-usa.com)  
 Phone: (707) 321-4447



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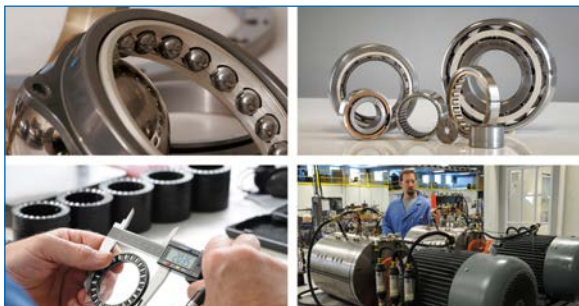
Contact us:  
 Tel: 980-299-9800  
 14325 South Lakes Drive,  
 Charlotte, NC 28273

[www.neugartusa.com](http://www.neugartusa.com)

## Napoleon Engineering Services

Booth 532

Napoleon Engineering Services specializes in custom bearing manufacturing and has invested heavily in their custom bearing manufacturing capabilities over the past year to satisfy increasing demand.



“Our goal is to provide our customers quality products with the shortest lead times possible. With the investments in our new 22,000 sq ft facility and increased machining capabilities we are looking forward to continuing that commitment of speed and quality,” stated president and chief engineer, Chris Napoleon.

On average, NES' lead times for custom bearings range from 8-12 weeks with manufacturing capabilities encompassing a number of specialty ring materials, cages, rolling elements and coatings for use in a wide range of applications. Napoleon Engineering Services performs all manufacturing, testing and inspection services from its ISO 9001:2008 certified facility in Olean, NY.

### For more information:

Napoleon Engineering Services  
Phone: (877) 870-3200  
[www.nesbearings.com](http://www.nesbearings.com)

## Nichiei

Booth 408

Nichiei Company is a unique custom injection molder, specializing in ultra-precision components, including gears, bearings and gerotors. Gears as small as 2mm and as precise as .15mm module have been molded, meeting JGMA grade 0 requirements, which correlate to AGMA grades 13-14. Many applications involve metal replacement, providing lower cost, lighter weight, parts consolidation and improved performance (less noise, better corrosion resistance, etc.). Target markets include automotive, office equipment and medical devices and materials span the entire range of plastics, from acetal and nylon to Polysulfone and Polyetherimide (Ultem), all the way to PEEK and Polyamideimide (Torlon).



Nichiei has developed this expertise over a 30 year period and has learned that the key to their success is offering a fully integrated solution, from material recommendation, to mold flow analysis, to mold design and manufacture, to prototyping and production and then to final part inspection.

Come visit Nichiei to see examples of these parts with challenging geometries, including concave worm wheels, extremely fine pitch gears and even the 2mm microgear molded out of carbon-filled PEEK which can be viewed under a microscope.

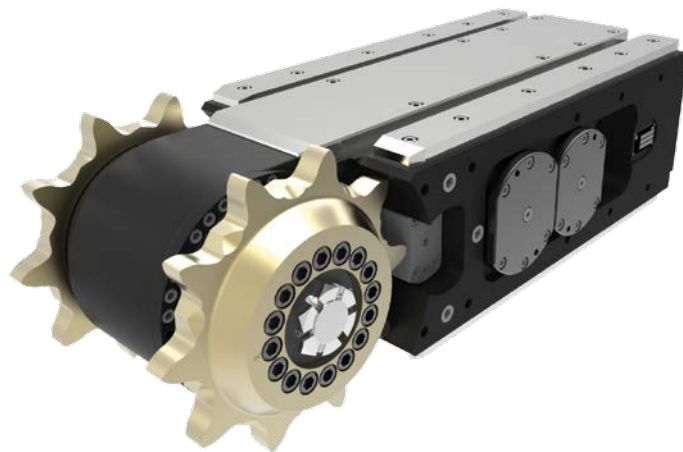
### For more information:

Nichiei Company, Ltd.  
Phone: (973) 729-2355  
[www.nichiei-ind.com](http://www.nichiei-ind.com)

## Oerlikon Drive Systems

Booth 915

Oerlikon Drive Systems, a part of the Swiss-based Oerlikon Group, is a leading supplier of high-precision gears, drives and shifting solutions. Under its market-leading brands of Oerlikon Fairfield and Oerlikon Graziano, the segment provides gears, splined shafts and components, synchronizer assemblies, planetary drives, transmissions and custom gearboxes for a wide range of applications, including sports cars, hybrid and electric vehicles to machinery and equipment for agriculture, construction, mining and energy production.



A variety of custom gears, shifting solutions, final drives and transmissions will be shown at the show. Specific end-use applications on display will include a track drive for a compact track loader, a swing drive for a ladder truck, tram and shuttle car drives for underground mining, integrated hydraulic and electric planetary final drives, a generator set with step up gearing for off highway hybrid-electric vehicles and innovative transmission designs that extend the range of electric passenger vehicles.

### For more information:

Oerlikon Drive Systems  
Phone: +39 011 9570 1  
[www.oerlikon.com/en/company/company-overview/segments-drivesystems](http://www.oerlikon.com/en/company/company-overview/segments-drivesystems)

## Power Transmission Engineering

Booth 1022

Stop by throughout the show to see live interviews with technical experts, product specialists and innovators from a wide variety of gear and power transmission-related companies. Watch and listen as our editors gather information for upcoming articles and take advantage of the opportunity to ask questions of your own from the suppliers you want to know more about.



Also, if you really want to get into the technical details of gears, stop by at 10:30 a.m. or 2:30 p.m. on Tuesday, October 24 or Wednesday, October 25. That's when we're hosting live sessions of our popular "Ask the Expert" column. We've assembled the brightest technical experts in the gear industry to provide you with gear design insight, manufacturing know-how and decades of their own experience. **PTE**

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