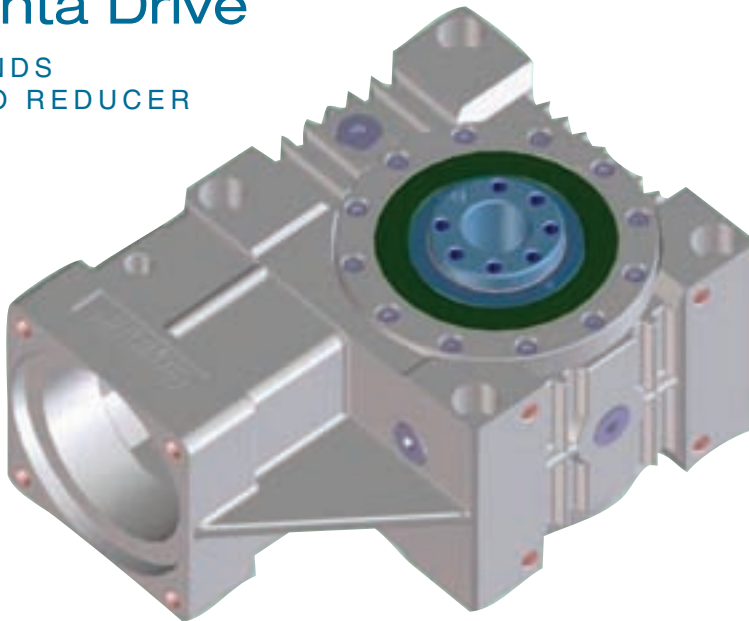


## Atlanta Drive

EXPANDS  
SERVO REDUCER  
LINE



Atlanta Drive Systems expanded its range of servo reducers to offer four levels of precision and meet many application requirements.

John Entwistle, vice president of engineering at Atlanta Drive, explains, "This can save the company money because they only have to pay for the option they need. The machine designer has more options when designing a machine and can select only the accuracy and performance level needed for the application."

Building on the high-precision servo worm reducer product, the high torque version offers 150% torque capacity of the standard servo worm reducer while reducing the backlash level to less than one arc-minute. The output was redesigned for increased bearing capacity and an option for flanged connections based on ISO 9409.

The e-servo version offers the same torque capacity as the standard servo worm reducer with a backlash level of less than six arc-minutes. The b-servo, or basic, version offers 90% of the torque capacity of the standard servo

reducer and has a backlash level of less than 12 arc-minutes.

The four levels of precision options allow a machine designer to select the required reducer precision. A wide range of motor couplings and mounting flanges are available for the complete reducer range to mount to many servo motors and the hollow bore output can be used to mount output shafts, pinion shafts and other drive elements.

Typical applications include rotary axis drives, traveling gantries and columns, and material handling axis drives for the material handling, automation, aerospace, machine tool and robotics industries. ■

**For more information:**  
Atlanta Drive Systems  
25 Main St.  
Farmingdale, NJ 07727  
Telephone: (732) 919-1470  
Internet: [www.atlantadrive.com](http://www.atlantadrive.com)

## M&M Precision

INTRODUCES  
NEW GEAR  
INSPECTION  
SYSTEMS

The new in-line, in-process inspection systems from M&M Precision Systems are designed around a completely modular concept.

According to the company's press release, the system allows for ease of integration to customer specific applications.

Todd Griffith, product manager, says, "The IPG line puts inspection capabilities on the production line. It allows us to move from lab-based to real-time inspection. While off-line inspections serve as more of an audit, the IPG is capable of fully automated inspection if need be."

continued



Separated into three categories, the IPG-150AT offers a 100% turnkey inspection system that incorporates full material handling for high-volume production demands. According to the company's press release, the IPG-150SI is a robust inspection alternative that allows integration to existing cell automation. Finally, the IPG-150SM is a semi-automatic solution that offers a shop-hardened design for medium-volume cell inspection.

The three systems offer the capability to inspect total composite, tooth-to-tooth runout and dimension over pins, as well as lead variation, lead average and lead taper when utilizing an optimal Gimbal head model.

Finally, the ability to add part sorting and marking, remote diagnostics, SPC diagnostics and burnishing and part washing allows this turnkey solution to be based specifically on application requirements.

"We have a strong background in inspection," Griffith says. "Now we're operating in a different environment with a much higher level of crisis. The growing trend is towards automation on the shop floor, and we picked a platform that was the easiest way to transition." ■

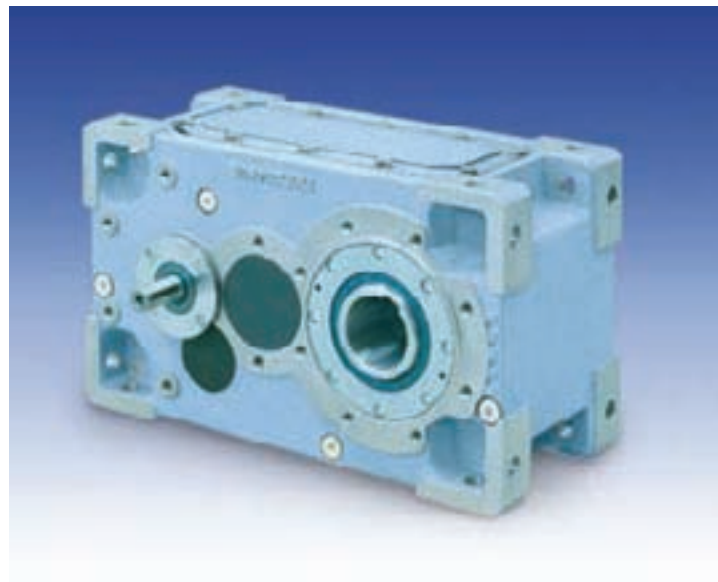
**For more information:**

M&M Precision Systems Corp.  
300 Progress Rd.  
West Carrollton, OH 45449  
Telephone: (937) 859-8273  
Fax: (937) 859-4452  
E-mail: [info@mmprecision.com](mailto:info@mmprecision.com)  
Internet: [www.mmprecision.com](http://www.mmprecision.com)

## Bonfiglioli

### INTRODUCES NEW PARALLEL SHAFT DRIVES

**The new series of heavy-duty parallel shaft gear reducers from Bonfiglioli offer increased power density.**



According to the company's press release, the first four of the 12 sizes are production-ready. The power density level has been increased, and the largest model has a rated torque of 16,550 Nm. A wide range of uses is possible with torque values of 4,650; 6,550; 11,500; and 16,550.

In addition, two or three stages with a ratio of 7.1:1 to 112:1 fulfill many speed expectations. The reducers can be built in a variety of ways, as they are available with a foot or flange configuration with a hollow shaft for slot and key attachment.

Motor options include the full shaft in metric or inch measurements, in

the case of direct motor attachments, which then creates a compact geared component for the unit. In terms of output drives, either single or double full shafts in various designs, hollow drives with a slot and key, and designs with a shrink fit coupling are in the program. A number of flange configuration supplements are available for direct transmission options. ■

**For more information:**

Bonfiglioli S.p.A.  
40812 Lippo Di Calderara Di Reno  
Italy  
Telephone: +(39) 051-647-3111  
Fax: +(39) 051-647-3106  
E-mail: [bonfiglioli@bonfiglioli.com](mailto:bonfiglioli@bonfiglioli.com)  
Internet: [www.bonfiglioli.it](http://www.bonfiglioli.it)

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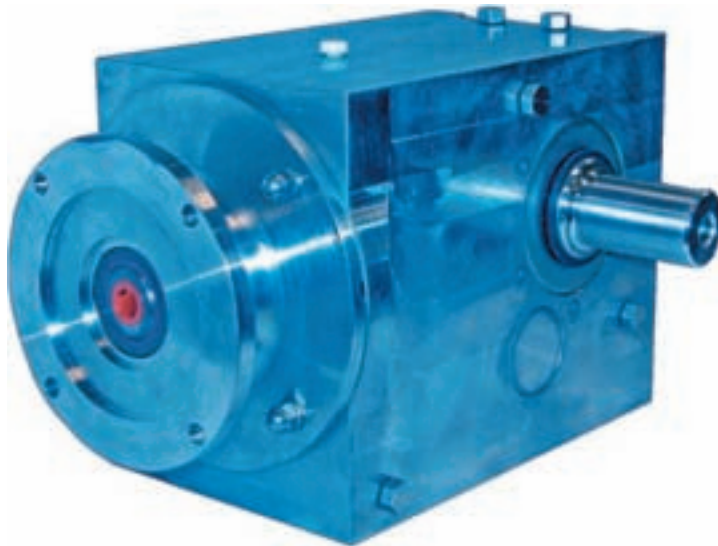
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## Falk Corp.

CREATES  
NEW  
RIGHT ANGLE  
GEARMOTOR



A new line of stainless steel helical bevel gear drives from Falk is recommended for food industry sanitation requirements. These drives feature smooth housing and C-face mounting surfaces constructed of corrosion resistant stainless steel. This design eliminates areas where bacteria and pathogens normally grow and provides for thorough wash-downs. In addition, all unused housing holes are plugged with stainless steel caps and the nameplate information is etched into the housing, allowing for easier washdown. All hardware features capsulated locknuts, further eliminating areas for bacterial and pathogen growth.

According to the company's press release, Falk's new ultramite SS drives feature a C-faced input for use with many brands of electric motors. Dual lip/high pressure exclusion seals are supplied as standard to retain lubrication while standing up to the harsh chemical and high pressure washdown environment found in the food and beverage industry. ■

**For more information:**  
Falk Corp.  
P.O. Box 492  
Milwaukee, WI 53201  
Telephone: (414) 937-4686  
Fax: (414) 937-4047  
E-mail: [rnimmer@falkcorp.com](mailto:rnimmer@falkcorp.com)  
Internet: [www.falkcorp.com](http://www.falkcorp.com)

## KTR Corp.

INTRODUCES  
NEW  
COUPLINGS

The Rotex ZS-DKM-H from KTR Corp. has been developed for the pump industry. The main innovation feature of the H-type coupling is the shell hubs that simplify assembly and disassembly through four screws only.

This type of hub offers advantages, particularly in hot areas with higher shaft displacements, according to the company's press release. ■

**For more information:**  
KTR Corp.  
P.O. Box 9065  
Michigan City, IN 46361  
Telephone: (219) 872-9100  
Fax: (219) 872-9150  
E-mail: [ktr-us@ktr.com](mailto:ktr-us@ktr.com)  
Internet: [www.ktrcorp.com](http://www.ktrcorp.com)



## Bodine Electric

INTRODUCES  
NEW  
GEARMOTOR



The new Pacesetter family of AC inverter duty motors, gearmotors and AC variable speed controls from Bodine Electric offers new motor and gearhead combinations for maximum power output in a small package. Applications include factory automation, machine tools, conveyors, and material handling and packaging.

The gearmotors include a Quinsulation five-stage insulation system designed to meet NEMA MG 1-1993, Section IV, Part 31. The inverter-grade magnet wire and Class F insulation system offer protection against spikes and corona damage caused by the inverter. Pacesetter gearmotors are UL-recognized for construction, CSA-certified and CE-compliant.

The Pacesetter motors and gearmotors are rated from 1/25–3/4 hp, 230 VAC, 60 Hz, three-phase for operation with a wide range of inverter products. Needle bearings on the output shaft of the gearmotor provide increased radial load capacity and long life. The gearmotors are permanently lubricated and require no maintenance, according to the company's press release. Standard features on most models include fan

cooling capacity for high output power, an aluminum center ring and end shields for high thermal efficiency and light weight, a totally enclosed IP-20 rating, hardened helical output gearing for quietness and high output torque. Hollow shaft, right angle versions are also available. ■

### For more information:

Bodine Electric  
2500 W. Bradley  
Chicago, IL 60618  
Telephone: (773) 478-3515  
Fax: (773) 478-3232  
Internet: [www.bodine-electric.com](http://www.bodine-electric.com)

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## NSK

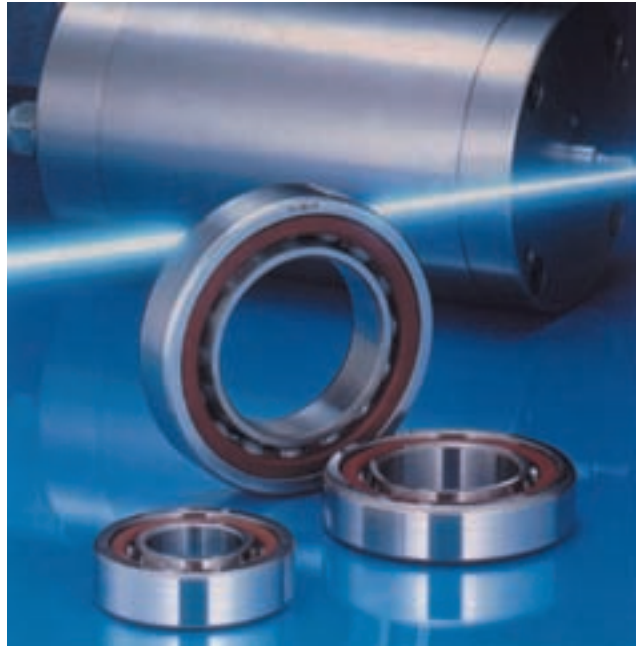
### INTRODUCES NEW SERIES OF BEARINGS

NSK's new BGR Series of super precision angular contact bearings combines the benefits of SHX heat and seizure resistant steel and ceramic balls to meet the high accuracy (ISO Class 2) and high-speed (up to 244,000 rpm) requirements of the internal grinding industry.

The combination of special long life SHX steel and ceramic balls in the BGR design also ensure extra bearing life for users of grinding spindles. SHX steel is suited for use in machine tool spindles, which run at high speeds with a minimal supply of lubricant.

According to NSK, the heat resistance is nearly equal to M50 steel, a material used in jet engines, while its wear resistance and seizure resistance and durability are all superior. Building on special materials technology, the optimized BGR design integrates an outer ring guided cage for better lubrication and also has the shoulder of its inner ring relieved to ensure a stable oil supply into the bearings.

With accuracy to ISO Class 2, the BGR Series bearings offer easy handling for the user as a result of their non-separable inner ring. NSK adds that this



feature simplifies the spindle assembly and allows users to benefit from the ability to configure the BGR bearings in universal combinations of back-to-back (DB), single or tandem (DT), or face-to-face (DF) arrangements.

Available in an ISO dimension series (10 and 19) and bore sizes from 6–25 mm, these bearings are offered with the choice of steel balls, ceramic balls or a combination of ceramic balls and SHX rings. Bearings are suitable for use with high-speed greases (up to 192,000 rpm with ceramic balls) and SHX material and oil-air lubrication systems.

In the combination with ceramic balls and SHX rings, bearings were able to achieve their highest operating speeds (up to 244,000 rpm with a 6 mm bore bearing). ■

#### For more information:

NSK Europe Ltd.  
Northern Road, Newark  
Nottinghamshire NG24 2JF  
England  
Telephone: +(44) 1636-605-123  
Fax: +(44) 1636-602-750  
E-mail: [info-uk@nsk.com](mailto:info-uk@nsk.com)  
Internet: [www.eu.nsk.com](http://www.eu.nsk.com)

## Hansen Transmissions

### INTRODUCES NEW GEAR UNIT

The M4 gear unit from Hansen Transmissions is available in 14 sizes and is based on Hansen P4 technology.

According to the company's press release, the unit can be customized



for a range of applications from standard menu options. All components are housed in a robust monobloc housing. In order to simplify selection, menu options vary—from a basic menu for buying a standalone gear unit to one for gear units with a motor mounting

arrangement to another with a motor lantern. The last two at the same time form the basis of complete drive units. With options from the chosen menus, no specific drawing work is required. ■

#### For more information:

Hansen Transmissions  
33 Lakeview Court  
Verona, VA 24482  
Telephone: (540) 213-2442  
Fax: (540) 213-2222  
Internet: [www.hansentransmissions.com](http://www.hansentransmissions.com)



## Voith Turbo

### INTRODUCES NEW FLUID COUPLING

The new TurboSyn friction coupling from Voith Turbo increases the economy of single drives and utilizes its potential for energy savings. With the new fluid coupling, the nominal slip has been eliminated, according to the company's press release.

For the operation of mills, this means lower energy requirements and outputs increased by 3% or even 10% for fans. As a result, the annual throughput can increase considerably.

According to the company, the new Voith Turbo coupling combines the existing advantages of hydrodynamic couplings with a newly patented principle. The hydrodynamic advantages crucial for the start-up procedure, e.g. motor protection and smooth acceleration of the driven machine, are retained and nominal operation now occurs without slip.

The basic design is similar to that of a standard Voith coupling. However, the inner wheel consists of pivoting segments attached to the hub in a rotary fashion. As soon as a certain speed is accomplished, segments radially swivel to the outside and create a friction connection between inner wheel and coupling shell. As a result, the differing speeds of outer and inner parts are synchronized, and a direct connection between input and output is realized.

Voith adds that the TurboSyn is a compact coupling that does not need a control system in order to protect against overload—the coupling itself does this. ■

#### For more information:

Voith Turbo GmbH & Co.  
Alexanderstrasse 2  
89522 Heidenheim  
Germany

Telephone: +(49) 7321-37-0  
Fax: +(49) 7321- 377-110  
E-mail: [Fritz.Junker@Voith.com](mailto:Fritz.Junker@Voith.com)  
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## Haydon Switch & Instrument

INTRODUCES  
NEW LINEAR  
ACTUATOR



The Size 8 captive linear actuator from Haydon Switch & Instrument includes actuator options that open avenues for equipment designers who require performance and endurance in a compact package.

The captive linear actuator is designed with an HSI patented, integral anti-rotation mechanism and is suitable for applications in which anti-rotation methods would be difficult or impossible to employ. Captive linear travel requirements beyond 50 mm may be impractical, and the factory should be consulted for the best solution for the application.

Built for several million cycles and superior performance, the Size 8 linear actuator features engineering thermoplastics in the rotor drive nut and a stainless steel acme lead screw. With this patented design, quietness and maintenance are ensured, according to HSI's press release. This captive hybrid linear actuator is available with resolutions ranging from 0.0015–0.04 mm and delivers thrusts up to 4.5 kg.

Applications requiring precise positioning and rapid motion are best for this motor, according to the company. ■

**For more information:**

Haydon Switch & Instrument  
1500 Meriden Rd.  
Waterbury, CT 06705  
Telephone: (800) 243-2715  
Fax: (203) 756-8724  
E-mail: [info@hsi-inc.com](mailto:info@hsi-inc.com)  
Internet: [www.hsi-inc.com](http://www.hsi-inc.com)

## SEW-Eurodrive

INTRODUCES  
NEW FOOD  
INDUSTRY  
DRIVE SYSTEM



The Food Industry Option Package from SEW-Eurodrive is a drive system with specialized components to meet the damp conditions and chemical washdown requirements of the food industry. This package includes a two-year warranty covering any motor failure resulting from moisture damage.

The package features TorqLOC, the company's patented keyless hollow-shaft mounting system designed especially for the food industry. TorqLOC eliminates the need to supply a key or turn the shaft to exacting tolerances. Its interchangeable, tapered bushings fit a variety of standard shaft sizes without additional machining and permits easy removal after years of use.

Key features include FT, KT, or ST gearboxes with symmetrical stainless steel output shafts. Gearmotors also include specially designed PTFE seals to keep water out. Seals are constructed from the same material found in Teflon. Each gearmotor contains a seal on its outer shaft, a V-ring at the motor fan and a non-PTFE seal on the motor shaft. ■

**For more information:**

SEW-Eurodrive  
P.O. Box 518  
Lyman, SC 29365  
Telephone: (864) 439-8792  
Fax: (864) 949-3039  
Internet: [www.seweurodrive.com/iop](http://www.seweurodrive.com/iop)



## Samputensili

INTRODUCES  
NEW  
COATING

Samputensili has introduced the Sunite Alcrona coating for use in the gear cutting industry worldwide.

According to the company's press release, this coating can extend tool life up to 50% as a result of considerably increased temperature resistance. The coating protects the substrate from oxidation at high temperatures, thus reducing negative interactions between the tool and the workpiece.

The coating serves as a solution for automotive companies, which have high production volumes and short cycle times. The ideal type of coating depends mainly on the application in question, and the type of machinery (wet or dry). Its resistance to temperatures up to 1,100°C makes the Sunite Alcrona suitable for dry gear cutting.

A Balzers furnace applies the new coating to tools. Samputensili service centers allow installations to be available continuously. ■

### For more information:

Samputensili S.p.A.  
Via Triumvirato n. 13-40132  
Bologna  
Italy  
Telephone: (+39) 051-4132311  
Fax: (+39) 051-434149  
E-mail: [P.fiaccadora@samputensili.it](mailto:P.fiaccadora@samputensili.it)  
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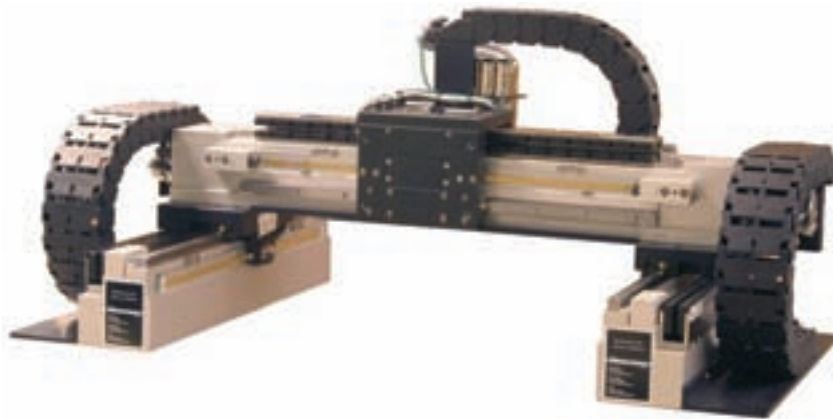
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## Aerotech

INTRODUCES  
NEW GANTRY  
SYSTEM



The ASGS1000 Series Cartesian gantry system from Aerotech is designed for a range of automation platforms like high-speed pick-and-place, automated assembly, vision inspection, dispensing stations and high accuracy inspection.

According to the company's press release, the system contains brushless

linear servomotors that can achieve speeds of 2 m/s and accelerations of 2 g.

Additionally, since the linear motor is a noncontact device, there is no backlash, wear or maintenance. Bearings are pre-loaded linear motion guides with wiper seals and grease fittings. ■

**For more information:**

Aerotech Inc.  
101 Zeta Dr.  
Pittsburgh, PA 15238  
Telephone: (412) 963-7470  
Fax: (412) 963-7459  
E-mail: [sales@aerotech.com](mailto:sales@aerotech.com)  
Internet: [www.aerotech.com](http://www.aerotech.com)

## Flowserve

INTRODUCES  
NEW MODELS  
TO PT SERIES  
WORM GEARS



Flowserve Corp., a provider of fluid motion and control products and services, added two new sizes to the Flowserve Limitorque PT series for worm gear operations. The PT series is built to provide the torque needed for operation of quarter-turn valves used in water and wastewater treatment, petroleum refining and distribution, and other industries.

The new additions are PT-12 and PT-14, rated at 880 and 1,600 ft.-lbs. respectively, designed to provide versatility for torque and operating time requirements. The new models are con-

structed with a rugged cast-iron housing for weatherproof, submersible or buried service applications.

While Limitorque PT can be used for manual valve operation, motorized valve control using the PT offers superior process control.

Central to the design of the PT is a one-piece rolled worm and shaft. According to the company's press release, unnecessary parts have been eliminated to improve performance, and a careful evaluation of the operator's components has led to standardized parts across all

torque ranges. Optimized spur gear attachments facilitate the use of smaller actuators with the PT.

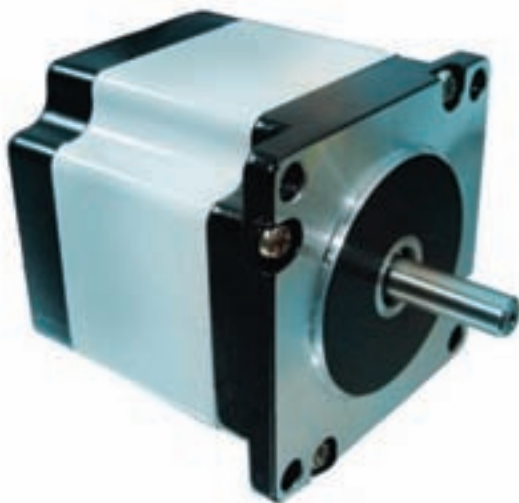
The PT can be installed in environments with temperatures as low as  $-50^{\circ}\text{C}$ . ■

**For more information:**

Flowserve Corp.  
5215 N. O'Connor Pkwy., Ste. 2300  
Irving, TX 75039  
Telephone: (972) 443-6500  
Internet: [www.flowserve.com](http://www.flowserve.com)

## Lin Engineering

INTRODUCES  
NEW MOTORS



Lin Engineering Inc. has introduced a new line of IP65-rated motors. These motors are available in size 17 and 23 and offer protection against damaging environments.

According to the company's press release, the motors are totally protected against dust as well as guaranteed to

withstand low pressure jets of water sprayed from all directions from a distance of three meters. These jets of water can carry pressure up to 30 kPa from all directions at a rate of 12.5 l/min. for the duration of three minutes. ■

### For more information:

Lin Engineering  
1990 Russell Ave.  
Santa Clara, CA 95054  
Telephone: (408) 919-0200  
E-mail: [sales@linengineering.com](mailto:sales@linengineering.com)  
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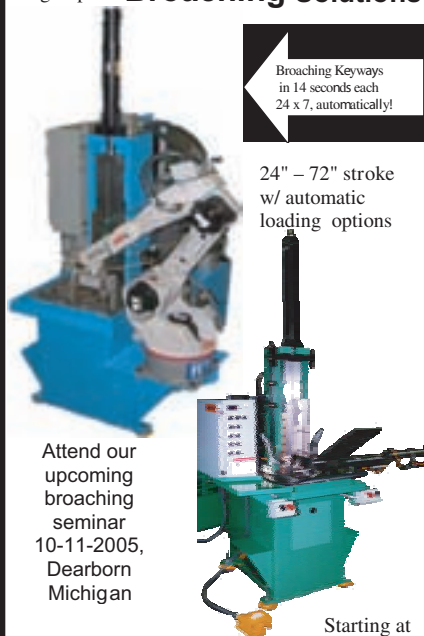
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# HOW TO AVOID SUFFERING THE HIDDEN COSTS OF SUPPLIED GEARING

By Russell Beach

**T**he gear set has a profound impact on your geared application's performance and perceived value.

So the first thing to consider when selecting a gear supplier is "what product reputation does your company want in the marketplace?"

Is your company primarily focused on purchasing the lowest-priced gear set? That is not the same as being focused on purchasing the best solution. The lowest-priced gear set also tends to be your best solution only when...

- Noisier products are acceptable to you and your customers.
- Shorter life cycles and possible early failures are bearable.
- Higher product rebuild and return rates are financially justifiable.
- In-house resources are available to promptly analyze and solve gear-related quality problems as they occur.
- Distributors tolerate delays and shortages because your supply chain is not dependable.

Viewing purchased gearing, especially bevel gears, as though they were a commodity item has an associated risk. Many market-leading manufacturers have discovered the real cost of supplied gearing comes into effect AFTER the supplier's invoice has been paid.

The lowest-priced gear set usually comes with no "frills"! You're on your own to figure out why there might be problems... and to prove it to the supplier to get restitution! Many times, it may be impossible for you to show where a faulty part is "not to print."

## Important to Know:

**Even a properly manufactured gear set can fail in an application. The "value added" supplier is one that can and will support you beyond supplying piece parts.**

Many times a problem with a gear set has nothing to do with the gears themselves. A capable gear supplier is adept at more than just making gears. He must also understand how the gears will react to a multitude of variables in your application, such as:

- Lubrication
- Housing Tolerances
- Assembly Practices
- Mounting Arrangements
- Blank Design
- Materials Selection
- Heat Treat Specifications
- And More...

## FREE RESOURCES

### Straight Bevel Layout Guide:

Free resource to help design engineers work with straight bevels independent of their gear supplier. Send a blank e-mail to: [stbg@gearconsulting.com](mailto:stbg@gearconsulting.com).

### Spiral Bevel Layout Guide:

Free resource to help design engineers work with spiral bevels independent of their gear supplier. Send a blank e-mail to: [sblg@gearconsulting.com](mailto:sblg@gearconsulting.com).

### Insights to Gear Function:

Understanding the inner workings of bevel and hypoid gear tooth load sharing, load carrying and motion transmission through Loaded Tooth Contact Analysis. Send a blank e-mail to: [igf@gearconsulting.com](mailto:igf@gearconsulting.com).

Another key point to consider is "how much control does the supplier have over the entire process?" If blanks or machining processes are outsourced by your supplier to sub-contractors, it will be more difficult to track down problems. This is especially true if the heat treating is outsourced.

For truly the best solution, find a gear supplier with:

- Extensive know-how and experience
- Willing support capability IN your application
- Proven production capabilities at your quality level
- Control of most or all processes in-house
- Commitment to quality
- Generous engineering support
- Commitment to on-time delivery
- State-of-the-art manufacturing equipment
- State-of-the-art inspection equipment

*"My experience with Nissei has been very satisfactory. When we had a problem with a spiral bevel gear set, they responded quickly. With their help, we found that the problem component was our angle head and not the gears from Nissei. Their commitment to customer support allowed us to resume production in a timely manner."*

— Design Engineer, a 30+ year Nissei customer

For expert assistance with:

- Worms/Worm Wheels
- Spur Gears
- Helical Gears
- Spiral and Straight Bevels
- Zerol Bevels
- Ground Gears
- Hypoids/Super Reduction Hypoids
- Armature/Motor Shafts

Contact Russell Beach at: [r.beach@nissei-usa.com](mailto:r.beach@nissei-usa.com)

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