

Heavy Duty Welding

ROTARY TABLE IMPLEMENTATION DELIVERS QUALITY AND PRECISION FOR PLUMBING APPLICATION

For over 40 years, LSP Products Group, Inc. has been developing innovative polymer products for the plumbing industry. With a manufacturing plant featuring 11 injection molding machines, LSP molds most of their wholesale plastic plumbing parts in the United States. LSP was looking for solutions to replace their manual assembly line processes and ineffective conveyor options particularly for two new plumbing products to be produced in ultrasonic and spin welding operations.

Since the welders have applied force pressure and small part size, rotary indexing tables present a perfect option for small progressive production. LSP's Marshall Henningsen, director of manufacturing and Jim Ross, manufacturing engineer, soon began to investigate solutions which led them to Weiss North America, Inc.

Originally, LSP was planning on building and implementing their automation internally on their own chassis. However, the Weiss sales and engineering team provided them with a 3D CAD model of a Weiss chassis along with a unique configuration proposal based on their TC (150/220) Series tables. The proposed Weiss chassis allowed LSP to readily implement their own automation for two machine designs.

A key design element that both machines had to address was overcoming the large downward forces (400lbs.) from the servo-driven welders, to melt plastic that was exacted onto the in-

dex table's tool plate in repeated production. To overcome this, an anvil back-up support was designed underneath to absorb the intense loads from the welders—ultimately promoting longer production life for the tables and plates.

The cornerstone to achieving each chassis system's production goal was implementing Weiss' third generation configuration TC heavy duty rotary indexing tables—TC150 (six station) and TC220 (eight station). Both tables feature a hard coat anodized plating finish on the aluminum jig plate. This coating is essential in providing durability versus the intense downward force pressure subjected on the anvil that supports the plate.

LSP is producing a new, in-line hammer arrester made out of polymers vs. traditional copper. The patented, first of its kind in-line polymer hammer arrester can be integrated into water connectors such as washing machines, ice makers, dishwashers or directly into the plumbing system's piping to smooth out the pressure fluctuations associated with modern appliances.

Utilized for greasing, inserting components and ultrasonic welding operations in six stations, the Weiss chassis system includes the TC150 index table (32" diameter, $\frac{3}{4}$ " thickness), tool plate, machine frame, and an anvil back-up support for the tool plate.

LSP leveraged the Weiss eight station chassis system for plumbing industry applications such as toilets, faucets, etc. The semi-automated system includes the TC220 index table



LSP was looking for solutions to replace their manual assembly line processes and ineffective conveyor options for two new plumbing products and utilized a rotary table configuration from Weiss N.A.

(42" diameter, $\frac{3}{4}$ " thickness), tool plate, machine frame and an anvil back-up support for the tool plate.

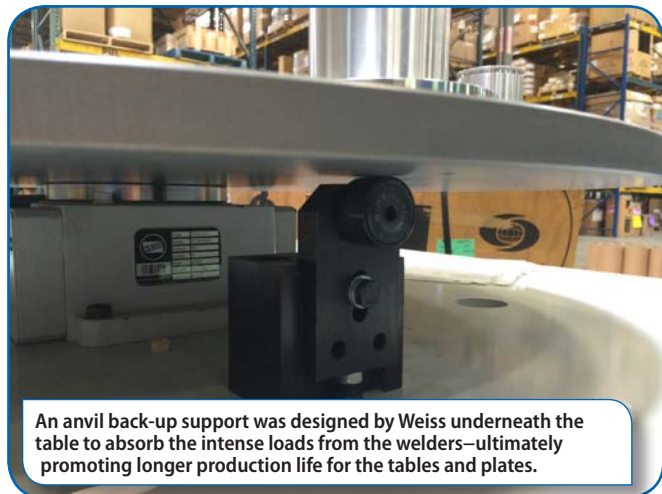
Production features seven assembly stations and a servo spin welder station that uses radial motion to apply over 300lbs. of force pressure to friction-weld plastic part halves. Weiss designed the anvil support located underneath the center of the tooling head to effectively offset the force applied to the parts and the table during repeated station component spin welding. In addition, the robust rotary table platform provides accurate, level locations for pick and place automated assembly of the polymer quarter turn valve.

Weiss completed and shipped the smaller TC150-6 station unit in April 2015, and the larger TC220-8 station unit in October of 2015. Both units are nearing completion of advanced production of the innovative LSP polymer plumbing parts. Notably, the inclusion of the anvil back-up support will ensure advanced longevity for the system's core index table and tool plate against repeated welding production force pressures.

For more information:

LSP Products Group Inc.
Phone: (800) 854-3215
www.lspproducts.com

Weiss North America, Inc.
Phone: (440) 269-8031
www.weissna.com



An anvil back-up support was designed by Weiss underneath the table to absorb the intense loads from the welders—ultimately promoting longer production life for the tables and plates.



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Timken 6000 Ball Bearings

RELEASED IN NORTH AMERICA

Timken recently launched its 6000 series deep groove ball bearing line in North America, which completes the company's global roll-out of the series to its OE customer base and global distributor network. The new line, which is used in a wide variety of applications and conditions, meets ISO standards and dimensionally interchanges easily with competitor products. It reflects another step in the company's ongoing commitment to offer Timken customers and end users an even broader range of bearings and power transmission components. "Timken expanded its ball bearing supply chains to grow its deep groove ball bearing line and deliver product engineered to rigorous Timken quality standards," said Hans Landin, vice president of power transmission products for Timken. "We expect this initiative to improve the com-



petitive position of both the company and our customers."

Landin also indicated that Timken plans to continue expanding its ball bearing offering as part of the company's DeltaX growth strategy. "We want to be the 'one-stop shop' for bearings and power transmission products and services for Timken customers worldwide," he said.

For more information:

Timken
Phone: (234) 262-3000
www.timken.com

Aerotech Gimbals

OFFER HIGH ACCURACY POSITIONING

A series of gear-driven motorized gimbals for high-accuracy elevation-over-azimuth positioning has been introduced by Aerotech. The new AMG-GR two-axis optical mounts are available in numerous standard travel ranges and customized travels are easily accommodated from 90 degrees to continuous rotation. Accuracy of ± 10 arc sec and a variety of motor types, and cell designs make these gimbal mounts appropriate for applications ranging from sensor calibration to laser beam steering. Standard circular cells range from 100-300 mm diameter. Mounting options include a centered (balanced) cell or a front-surface reflection configuration. The gimbals are available with either brushless servo or stepper motors, with a full range of matching drives and controls. Vacuum-compatible versions



are also available. A direct encoder option allows increased accuracy and repeatability. Special configurations accommodate non-circular optics, cameras, sensors, and round optics larger than 300 mm in diameter. The gimbal's modular-design approach allows each mirror cell to be easily modified or replaced to accommodate sensors or other asymmetrically-shaped payloads.

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AutomationDirect Couplings

ADDED TO SUREMOTION LINE

Rotating shaft-driven mechanical components are commonly used in all forms of machinery that perform the various processes and functions of modern industry. While perfect alignment of shafts and rotating components is desired, shaft ends can often be misaligned. This misalignment places stress on shafts and related parts, which can result in the early failure of both. Drive couplings are often used to compensate for shaft misalignment, whether the misalignment is an intentional or an unintentional part of the design. AutomationDirect's new SureMotion drive couplings are available in four styles: jaw/spider, double loop, Oldham, and beam-style servo; bore reducers are also offered to fit a coupling when the exact bore is not available.

The SureMotion jaw/spider coupling is a clamp-style coupling with 14 to 65mm aluminum hubs and bore diameters ranging from 3/16" to 32mm. Polyurethane center "spiders" are avail-

able in different durometers for different degrees of shock and vibration reduction. Double loop couplings provide high torsional rigidity in a one-piece design. Hubs are made of series 300 stainless steel with corrosion protection against acids, alkalis, solvents, oils, grease and ozone. Available in 10mm to 40mm hub sizes, double loop couplings dampen shock and vibration and operate at speeds of up to 3,000 rpm.

Oldham drive couplings feature aluminum hubs in 19mm to 57mm sizes and have a large radial misalignment capability. Corrosion-resistant and non-magnetic, they provide electrical isolation, absorb shock and isolate vibration while dampening resonance. Available beam-style servo couplings are stainless steel set-screw couplings which feature the flexibility of a bellows coupling plus the torsional stiffness and strength of a disc coupling.



Ideal for high-speed applications up to 10,000 rpm, beam-style servo couplings are corrosion-resistant, have zero backlash and a maximum torque of up to 300 lb-ft.

Bore reducers are available for use in all SureMotion drive coupling hubs to reduce bore size. The hardened stainless steel split-collar design provides 25 percent greater holding power than standard split collars.

For more information:

AutomationDirect
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www.automationdirect.com

DieQua offers more gearboxes

Are You Selecting The Right Technology?

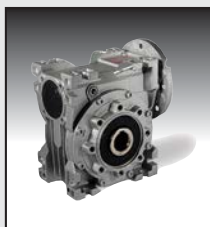
Whether your application is for precise motion control or for general power transmission, there are several gear technologies that can do the job. But which one does it best?

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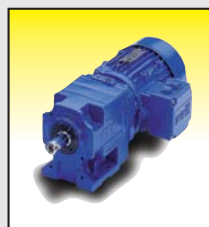
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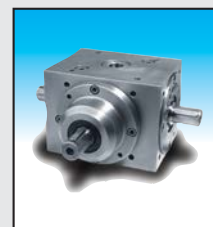
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Ringfeder Tschan TNR Couplings

DESIGNED FOR WIDE RANGE OF RIGIDITY

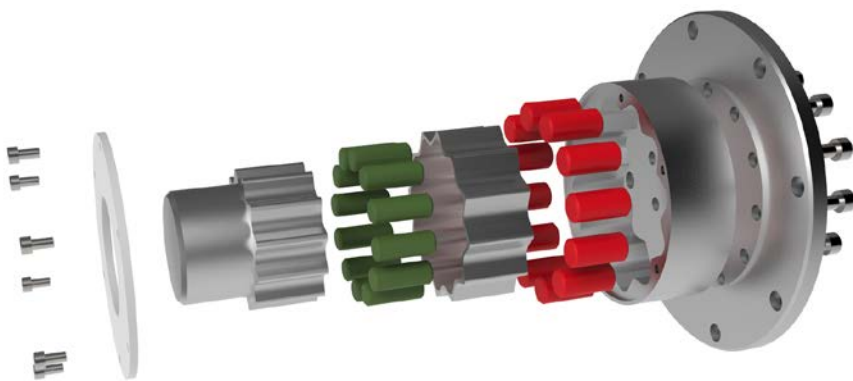
Unlike commonly used, torsionally elastic shaft couplings, the Tschan TNR is adjustable and therefore allows for a smoother start-up. This new, non-shiftable coupling made by Ringfeder Power Transmission is not only ideal for compressors, pumps, generators and crushers, but it is also suited for all fields of power generation using combustion engines, such as emergency power aggregates and mobile generators. Describing the challenge, Norbert Telaar, strategic product manager, said, "When selecting power transmission couplings, we often had to make compromises if a very involved design preceded it." Given this observation, his team came up with the idea of developing a coupling that would allow for the rigidity to be adjusted within a wide range.

When internal combustion engines, such as frequently used diesel engines, are employed, the power train is subject to dynamic stimuli. The actual dynamic behaviour can be plotted mathematically by joining mass moments of inertia, damping and rigidity. When the excitation frequency and the natural frequency coincide, resonance is inevitable. By changing the mass moments of inertia and specifically adjusting the rigidity of the coupling, these resonances can be moved from service speed into the non-critical range.

What makes the Tschan TNR special is that the parameters of the coupling can be adjusted within a wide range, while its outer dimensions remain the same. The coupling becomes "adjustable" because the elastic buffers are separated from one another and, as a result, are ordered in series. This simply requires a smart combination of available elastomers on an inner and an outer buffer plane, respectively. You no longer have to compromise over setting the torsional-vibration behaviour. By employing Tschan TNR, the properties of couplings can be adjusted dynamically with little effort.

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Haydon Kerk

EXPANDS LINEAR ACTUATOR SERIES

Haydon Kerk Motion Solutions has expanded its 15000 Series linear actuators with the addition of the smallest linear actuator in Haydon Kerk's extensive stepper motor line. The new linear actuators occupy a minimal 0.6" (15mm) diameter space and incorporate some of the most-advanced motion control technology available today. Included in that very small package are numerous patented innovations that provide customers high performance and durability.

15000 Series linear actuators are available in two designs—captive and external linear versions—and in a wide variety of resolutions, ranging from 0.02 mm to 0.10 mm per step. The actuators deliver thrust of up to 60 oz (1.7 kg) without compromising long life or cost. Models can also be micro stepped for even finer resolution. A proprietary manufacturing process that incorporates engineering thermoplastics

in the drive nut and a rolled stainless steel lead screw allows the motor to be highly efficient and durable.

Typical applications include medical equipment, semiconductor handling, valve control, X-Y tables, handheld instruments, and many more. In addition to standard configurations, Haydon Kerk Motion Solutions can custom design the actuators to meet specific application requirements.

For more information:

Haydon Kerk Motion Solutions, Inc.
Phone: (800) 243-2715
www.haydonkerk.com



Fenner Drives RotoShield GTL

PROVIDES DEFENSE AGAINST TORQUE OVERLOADS

Fenner Drives recently announced the launch of RotoShield Gearbox Torque Limiters. RotoShield GTL stops damage from costly torque overloads before it occurs by instantly disengaging components and automatically resets with 360 degrees rotation. The unique

compact design mounts directly to the motor and gearbox for easy installation with no additional design or machining required.

"RotoShield GTL Torque Limiters give you a new way to think about protecting your equipment from torque overloads," said Jeremy Bigler, product manager—metal products, Fenner Drives. "RotoShield is designed to mount between your motor and high efficiency reducer."

RotoShield GTL allows for easy design and installation with a more compact design at a more economical price point than torque limiters installed on the output of the reducer."

For more information:

Fenner Drives
Phone: (717) 665-2421
www.fennerdrives.com



Nord Drivesystems

OFFERS VL HEAVY DUTY SPREAD BEARING DESIGNS

Nord offers several variations of the VL heavy duty spread bearing designs, all which have specific features and advantages based on the specific mixing and agitating application requirements.

The first variation, VL2, offers reinforced output shaft bearings with increased bearing distance. This spread bearing design accommodates for high overhung thrust loads and allows for longer bearing service life. Included with the VL2 design is a grease-fitting for the lower bearing and a removable plug to allow excess grease to purge from the bearing cavity.

The VL3 dry cavity design adds additional oil leak protective measures to the VL2 spread bearing design. Nord's Quadralip sealing system prevents oil from leaking from the gearbox into the VL2 flange. If oil does happen to leak past the Quadralip seals, it flows down to an oil slinger mounted onto the shaft. As the shaft rotates, the oil will sling off into the dry cavity. A sight tube is provided in order to monitor the dry cavity.

VL2/VL3 with the addition of a drywell. While most drywell designs simply have a small oil dam tube inside the gear unit, Nord's stationary oil dam tube extends vertically above the top of the gear unit housing. This provides a much higher degree of leak safety. Additionally, there is a sealing o-ring at the top of the oil dam for maximum protection.

For more information:

Nord Drivesystems
Phone: (608) 849-7300
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The final variation is the VL4 heavy duty drop bearing design with a drywell. This true drywell design provides the high capacity bearing design of the

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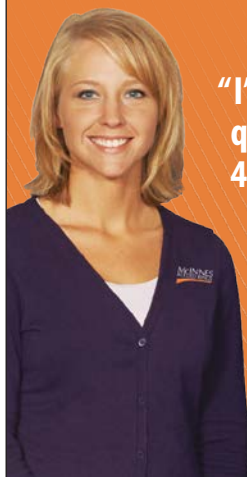
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Miki Pulley Couplings

ABSORB VIBRATION WHILE ALLOWING HIGH MISALIGNMENT

Miki Pulley is introducing their new Bellowflex Couplings for direct sale to OEM's in North America. These couplings absorb vibration while allowing for a high degree of angular misalignment.

Bellowflex Couplings have a unique design that combines a polymer resin bellows with aluminum hubs for high performance in machine applications involving vibration and misalignment. Allowing angular misalignment up to 10°, the coupling's bellows element provides robust elasticity and high damping performance with minimal backlash.

Bellowflex Couplings are suitable for stepper motor and encoder applications providing radial flexibility. They reduce reaction forces such as side loads on shaft bearings and seals that can be caused by shaft misalignment. The polymer bellows allows parallel, angular and axial shaft misalignments while maintaining constant transmission of torque and angular velocity.

They provide a low weight/low inertia solution and are designed with high strength, zero backlash aluminum hubs with corrosion resistant socket head cap screws for ease of installation.



These couplings handle shaft speeds from 5,500 to 9,000 rpm depending on model selected.

Especially important, the Bellowflex electrically insulating bellows prevents electrical current from passing between the system shafts through the coupling. These couplings operate well in applications where temperatures range from 20° to 60° C.

Available in three sizes, with a bore range of 3 mm to 18 mm, Bellowflex Couplings can be utilized in printing, packaging, inspection, automation and similar systems.

For more information:

Miki Pulley US
Phone: (800) 533-1731
www.mikipulley-us.com

J.W. Winco

RELEASES STAINLESS STEEL FORK HEADS

J.W. Winco, Inc. now offers GN 71752 stainless steel fork heads, plain fork type, in inch sizes. These RoHS-compliant fork heads are mainly used with pneumatic or hydraulic cylinders. They are made of stainless steel, European Standard No. 1.4301 (American Standard Series 304). Standard and left hand thread types are both available. A steel version is also sold by the company.

J.W. Winco offers an extensive selection of inch and metric size adjustable levers, cabinet U-handles, plastic and steel hinges and locking mechanisms, revolving and retractable handles,



hand wheels,
hand cranks, tube
connection and conveyor components, inch and metric construction tubing, shock absorption mounts, leveling mounts, hand knobs, spring, ball and indexing plungers, jig, fixture and fastening components, retaining magnet assemblies, toggle clamps, metric

ABB IRBT 2005

ACCOMMODATES RAPID PRODUCT CHANGES

ABB has introduced the IRBT 2005, a flexible, compact and modular medium track motion platform for both robots and transfer applications. It is designed to accommodate rapid product changes in applications that require an extended working range and high degrees of speed and accuracy, including arc welding, material handling, machine tending, and sealing and dispensing.

The IRBT 2005 is available with up to two carriages as a robot track, with additional carriage plates available to carry any necessary process equipment, and up to three carriages as a transfer track. The modular design is comprised of one-meter lengths that can be connected to form a track between two and 21 meters, allowing it to easily be adapted to different applications and evolve with changing production needs.

The ABB IRC5 controller runs the robots and the IRBT 2005 together as one dynamic model, with the proprietary QuickMove and TrueMove functionalities providing fast acceleration and precise path accuracy in any given track configuration. It offers high speed and precision accuracy, providing greater flexibility and up to 50 percent shorter cycle times.

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