

ART Technologies

STAMPS OUT DOWNTIME WITH FORCE CONTROL'S OIL SHEAR TECHNOLOGY

In the metal stamping business, precision, repeatability and uptime are key. But stamping accuracy suffers when improper tension on the coil feeders incorrectly supplies metal to the presses, resulting in off-spec parts and increased rejections. ART Technologies relies on an oil shear clutch brake to supply constant, reliable tension on the coil feeding one of their 400-ton presses to give them the precision and repeatability they need, with no downtime for maintenance or adjustment. When the plant is working 20 hours a day, that uptime is as critical as the tolerances they maintain.

ART is a full-service global supplier of precision metal stamping components, thrust bearings and coining services for raceways and washers. With 11 presses ranging in size from 45 to 800 tons, they stamp out a wide range of products for the automotive, truck, bus, solar, HVAC, agriculture, defense and other industries.

They currently operate a single shift, but when business demands it they operate two ten-hour shifts, or nearly around the clock. Whether they are cranking out miniature thrust bearings for the automotive industry or thick stampings for the

truck market, repeatability is key in all that they do.

A Pressing Problem

One of their Minster 400-ton presses has a $\frac{1}{2}$ hp motor which pulls the stock strip through the press, keeping tension on the steel at all times. This tension is a necessity because of the Die Design, and ensures consistency of the stamped product and optimal productivity.

Engineering Manager Fred Meinhardt, explains it this way: "We need to keep tension on the stock and to be able to run the drive unit at a speed slightly faster than the feed, so that when the feed stops, the clutch slips. When the feed restarts again, the stock tensioner takes up the slack and keeps tension on the stick as it moves forward."

The company had been using a mechanical clutch that was slipping all of the time, with unsatisfactory results, including feed problems, out-of-spec parts, and press down time. In addition to the production problems, the dry friction clutch would wear and require adjustment, maintenance or replacement, to the tune of four to five hours per week. According to Meinhardt, the produc-

tion loss due to downtime was 20 percent.

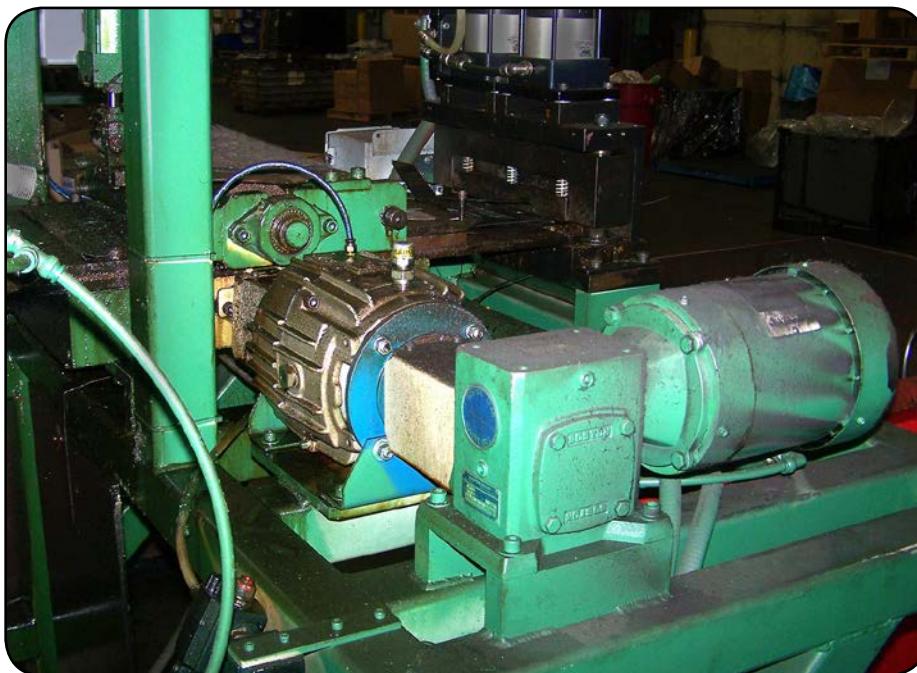
Meinhardt estimates that the old style clutches were replaced every six months or so, in addition to the four to five hours per week of maintenance. At the time, the plant was working two 10-hour shifts, or nearly round-the-clock, so that level of weekly downtime for maintenance and adjustment was substantial and unacceptable. To top it off, the extra time to replace the clutch-brakes was even more troublesome, because the failures rarely occurred at convenient times. Then Meinhardt found help right around the corner, literally.

"My brother works for Force Control Industries (the manufacturer of the oil shear clutch brake) which is within a mile of our plant, so I knew all about their capabilities," he said.

Installing the oil shear clutch break was hassle free, and the little effort required reaped a significant return on investment. In the two years that the Posidyne 1.5 clutch brake has been installed on the $\frac{1}{2}$ hp motor to tension the coil stock, there has been no unscheduled downtime for maintenance or repairs. At two years and running, the Posidyne 1.5 has already lasted 4-times longer than the dry clutch, and is still working fine.

How Oil Shear Technology Works

Normal dry clutch brakes employ a sacrificial surface—the brake disc or pad—to engage the load. Having no good way to remove the heat caused from engagement between the disk and plate, this material must absorb the heat. These extremely high temperatures will eventually degrade the friction material. As the friction surface wears away and begins to glaze, the ensuing torque fade causes positioning errors, which then require adjustment or replacement of the friction surface.





Oil-shear technology plays a major role in ensuring that the coil feeders at ART Technologies operates at peak efficiency—even at a much higher cycle rate. A fluid film flows between the friction surfaces, and is compressed as the brake is engaged. The Automatic Transmission Fluid (ATF) particles in shear transmit torque to the other side. This torque transmission causes the stationary surface to turn, bringing it up to the same relative speed as the moving surface. Since most of the work is done by the fluid particles in shear, by the time the surfaces actually meet or “lock up” wear is virtually eliminated.

In addition to transmitting torque, the ATF also helps to dissipate heat, thanks to a patented fluid recirculation system. Along with torque transmission and heat removal, the fluid also serves to continually lubricate all components—thus extending their service life. Oil Shear Technology also provides a “cushioned” stop that reduces shock to the drive system—further extending service life.

Unlike dry clutch brakes, the totally enclosed oil shear system is impervious to external elements

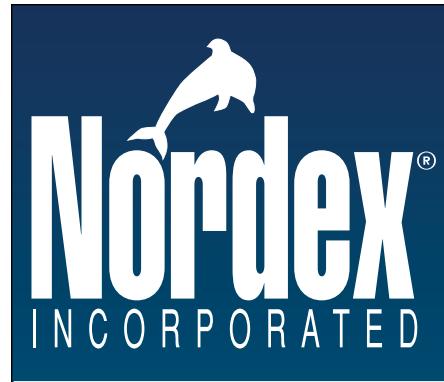
such as wet, dusty or dirty environments, as are common in many manufacturing plants. Since the layer of oil eliminates wear, the Posidyne clutch brake provides a long service life. With elimination of wear comes elimination of adjustment—and increased “up-time” for ART Technologies.

The reliability and durability of oil shear technology helps plants with a critical pathway maintain high production. Oil shear technology has helped ART Technology's plant increase precise control and stamp out downtime. Production is up 20 percent, with reduced scrap rates, fewer out-of-spec parts, and more parts per coil. The resulting efficiency and profitability keeps ART's machines precise and reliable—giving them a competitive edge in a competitive industry.

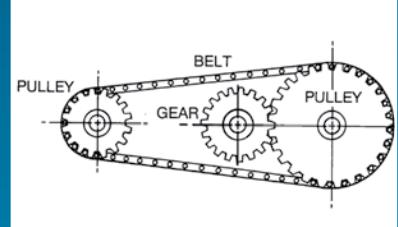
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ART Metals Group
Phone: (513) 942-8800
www.artmetalsgroup.com

Force Control Industries
Phone: (800) 829-3244
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Bosch Rexroth

LAUNCHES NEW SENSOR FOR COMPACT DIRECTIONAL VALVES

Safety is vital when working with material handling equipment, especially when working with massive suspended loads. A confirmation of hydraulic directional on-off or proportional valve shifting is one step in improving the overall safety integrity level (SIL level) of the machine. Bosch Rexroth's new sensor provides reliable monitoring of spool position and satisfies all international standards

valve body and solenoid coil, reliably monitors any movement of the valve spool. They are available in digital for on-off directional valves and in analog and ratiometric for proportional directional valves.

This sensor offers improvements in both safety and reliability engineering, while having no negative effect on either valve switching times or hysteresis. In addition, the sensor is a plug



in safety reliability engineering.

Bosch Rexroth's new compact directional control valve sensor monitors spool state of shifting in both mobile and industrial applications. The solid-state Hall-effect sensor, which is directly installed between the

and play component, using a standard M12 connection with 5 pins and IP69K protection rating for mobile applications.

For more information:

Bosch Rexroth
Phone: (800) 739-7684
www.boschrexroth.com

SEPAC

CLUTCH SERIES DELIVERS TORQUE IN OIL ATMOSPHERE

SEPAC designed the Multiple Disc Wet Clutch (ERD Series) to deliver a reliable, consistent torque within an oil atmosphere. This model offers a ball bearing-supported design to ease the installation process without relying solely on the customer for bearing support. The ERD Series is virtually maintenance-free under proper operating conditions as most of the components are hardened.



The ERD's design allows the clutch to automatically compensate for wear of the disc pack ensuring long life and the ease of installation make it ideal for a variety of applications. The unique disc design also reduces drag, as well as wear when operating de-energized. Additionally, the extraordinary reliability of the ERD Series makes it a top choice for fan clutches used in heavy and/or armored vehicles, motion control for flight system actuators, critical door operating actuators in industrial plants, or heavy duty machinery.

The magnet body of the ERD is typically installed on a motor or gearbox shaft with the option for a hub, coupling, gear, pulley or sprocket mounted to the spider or clutch cup. When current is applied to the coil, magnetic flux flows through the discs to the armature, which causes the outer discs to be squeezed between the inner discs, which transmit torque from the rotor input to the spider output. The magnet body of the ERD is held stationary by the means of an anti-rotation screw or post anchored to a hole provided. Coils are fully encapsulated in epoxy protecting them from the oil and/or harsh environment the clutch may be subjected to and a sealed connector is standard.

For more information:

SEPAC
Phone: (800) 331-3207
www.sepac.com

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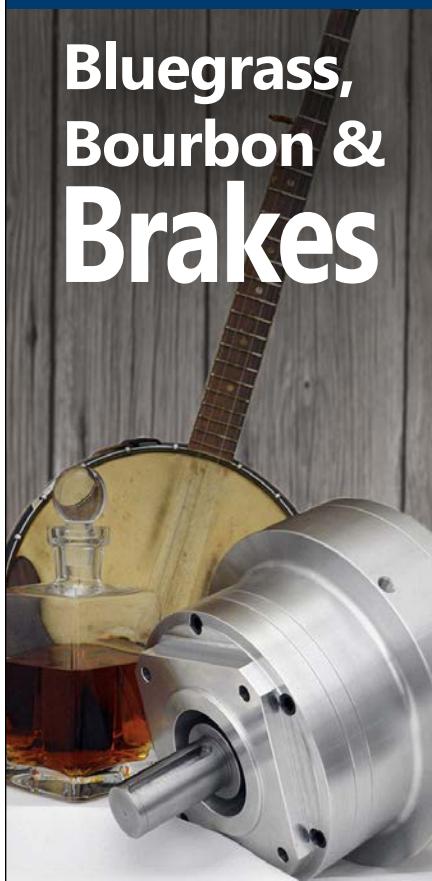
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R+W

SAFETY COUPLINGS SUITABLE FOR WASTEWATER APPLICATIONS

By popular demand, R+W has developed a standard model of corrosion proof ball detent safety coupling for clarifier drives in water treatment plants. The industry requires a well sealed, high grade stainless steel mechanism to stand up to harsh conditions, resulting in the specific design criteria. The function of the ball detent torque limiter is to disengage the driveline to protect flights, chains and sprockets in the event of overload, which can result from the high gear reductions associated with the slow speed movements required in the settling tanks.

Two standard body sizes are available, with a maximum bore diameter of 2.5" and disengagement torque settings ranging from 1,600 to 21,000 in*lbs. Custom options are always available on request. The new R+W safety coupling design features: reliable, precise, and consistent overload protection, high grade stainless steel



construction, adjustable and tamper proof options, optional switch plate and/or extension hub and torque overload protection for clarifier drives.

For more information:

R+W America
Phone: (630) 521-9911
www.rw-america.com

Miki Pulley

MICRO CLUTCHES DESIGNED FOR COMPACT PRECISION APPLICATIONS

Miki Pulley is introducing its CYT Micro Clutches for direct sale to OEM's in North America. These CYT Clutches are designed for compact precision applications and may be easily mounted to a driven shaft. Further custom variants can be realized by pairing a sprocket, timing pulley, V-belt pulley or shaft to the armature.

Miki Pulley CYT Clutches accurately connect and release power by being located between the input shaft and the load. The CYT stator is a bearing mounted type of clutch. It provides an efficient connection between a motor and a load with low inertia, minimal drag and long service life.

Two CYT Clutch models are available to accommodate different rpm ranges: a dry metal type and a ball bearing type. In addition, three types of armature configurations are available for pulleys, gears

and for combining both on shafts.

Miki Pulley CYT Clutches are durable and versatile with a straightforward design, consisting of clutch stator, rotor and armature. The clutch assembly features an integrated bearing design making mounting fast and easy while ensuring application concentricity and



Winsmith

DISPLAYS STAINLESS STEEL CONVEYOR DRIVES

Winsmith recently participated in the International Production & Processing Expo (IPPE) in Atlanta, GA, January 31–February 2. A manufacturer of high performance industrial gearing technologies, Winsmith displayed an upgraded stainless conveyor drive that features FDA-compliant blue plugs and a new Keyless Shaft Locking Device.

Launched in 2015, Winsmith's new stainless conveyor drive is IP69K certified to withstand high pressure, high temperature wash down and contamination. It is the ideal speed reducer for food processing, and demanding industry applications including fruit, vegetable, and meat processing. The stainless conveyor drive is available in five case sizes and more than 15,000 configurations. It features a single-piece design and sealed housing, facilitating easy cleaning, continuous operation and safe wash down. All lubricant and drain plugs are easily accessible for maintenance checks and have been fitted with new FDA compliant blue plugs that are both magnetic and x-ray detectable. These plugs ensure a smooth, bolt-free housing and have been pressure wash tested to 1450 psi.

excellent system runout. CYT Clutches operate well in temperatures from +14°F to +104°F (-10°C to +40°C). They have a speed range up to 3,600 rpm.

Available in bores ranging from 6mm to 10mm, with clutch torques ranging from 0.3 ft. lbs. to 0.74 ft. lbs. (0.4Nm-1.0Nm). The CYT Clutch utilizes corrosion resistant materials, and is RoHS compliant like all Miki Pulley products.

"Miki Pulley's CYT Clutches are ideal for compact systems requiring precision operation including printing equipment, packaging machines, and web handling applications," reports Jon Davidson, Miki Pulley sales specialist. "They are very reliable making them a preferred choice of motion system designers throughout the manufacturing world."

For more information:

Miki Pulley
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The Winsmith KLD shaft locking device is an upgrade that benefits food and beverage processors who want to simplify equipment maintenance. The keyless locking system can be installed in minutes and reduces disassembly times by mitigating fretting corrosion, as well as downtime for field servicing.

For more information:

Winsmith Inc.
Phone: (716) 592-9310
www.winsmith.com

Ogura

INTRODUCES ACSB CLUTCH/BRAKE SERIES TO NORTH AMERICA

Ogura Industrial is pleased to announce a new addition to our product line. Although this product is not new to Ogura, it is new to North America. The ACSB series is finding new opportunities for machinery manufacturers in North America because of some of its unique features.

ACSBs are both a clutch and a brake combined into one unit. When the

clutch is disengaged, the brake is on and when the brake is disengaged, the clutch is on. The ACSB series uses multiple discs to transmit high torque in a small diameter. All units have a built in adjustment for wear via adjustment nuts. Although primarily designed for industrial punch press applications, the ACSBs can be used wherever high torque pneumatic clutch/brake is required.

Ogura has been producing clutches and brakes since 1938. Over that time, we have developed over 5,000 different models of clutches and brakes. Although Ogura primarily produces electromagnetic clutches and brakes, we also produce magnet particle, mechanical, pneumatic, hydraulic and a variety of specialty products.

Ogura is the world's largest manufacturer of electromagnetic clutches and brakes. Current manufacturing capacity is over 30 million units per year. To provide localized support, we have manufacturing plants spread throughout the world in Asia, The Americas,



and Europe. All manufacturing facilities are ISO recognized and conform to the ISO 9001:2008, ISO 14001, and ISO/TS 16949.

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Phone: (732) 271-7361
www.ogura-clutch.com



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Parker

OFFERS MINIATURE, PRECISE DIRECT-DRIVE ROTARY STAGE

Parker's Electromechanical and Drives Division - North America is pleased to announce the release of the mPR (miniature precision rotary) stage. The mPR series is a miniature, precision direct-drive rotary stage with integrated high-precision rotary bearing, high-resolution rotary encoder, and 3-phase AC servo motor. It has been engineered to deliver a combination of modularity, flexibility, and performance in an extremely compact package. "The mPR's many features make it the ideal positioner for a number of high-tech industries," says Travis Schneider, product marketing manager of precision mechanics. "Applications in metrology systems, laser processing/machining, electronics manufacturing, and semiconductor manufacturing, for example, will benefit from the stage's combination of size, low profile, and high precision." The mPR 80 has common mounting features to that of Parker's MX80 linear stage, as well as the mSR 80/100, and the mPR 100 size has common mounting features to that of our 404XR linear positioner so users will be able to quickly and easily create complete multi-axis systems using the mPR. Standard features of the mPR Series include: two form factors, mPR 80-80 mm dia. x 75 mm, mPR 100-104 mm dia. x 90 mm tall, continuous 360-degree operation, four encoder resolutions (3-digital incremental, 1-analog sine/cosine), dowel holes in top and base for repeatable pinning, through-hole aperture, direct mounting features to Parker MX, mSR, and XR stages, three-meter, high-flex cables and lightweight aluminum construction.

For more information:

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Bonfiglioli

DEVELOPS WHEEL-TRACTION DRIVES WITH FULL HYBRID TECHNOLOGY

Bonfiglioli has announced the development of wheel-traction drives of the 600 series specifically designed for Tigon Technology backhoe loaders manufactured by Huddig. Each of the special four-wheel traction drives is capable of reaching an output torque of 40.000 Nm, and is driven by a liquid cooled 30 kW electric motor. The independent control of each wheel gives the opportunity for the backhoe loaders to be driven better on slippery surfaces. The Bonfiglioli 610 drives also increase the precision of the machine, making the maneuverability easier in tight spaces, for example in building sites located at city centers. Following Huddig requirements, the four drives are perfectly quiet.



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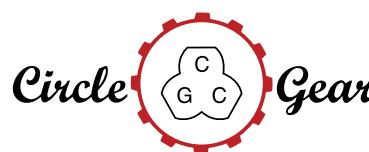
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Tigon Technology by Huddig is a hybrid technology that combines diesel and electric power allowing energy generation and regeneration in a way that has never been done before for construction machinery: the concept machine achieves significantly lower fuel consumption than a traditional backhoe loader. The new Huddig hybrid backhoe loader (based on this technology and equipped with Bonfiglioli four-wheel traction drives) is more precise and more efficient without producing emissions.

"Our expertise in final drive technology and electromobility solutions made Bonfiglioli a desirable partner for Huddig to develop a drive technology that would meet its requirements for innovation and technical expertise for the construction industry," said Stefano Baldi, sales director for the Mobile Industries.

For more information:

Bonfiglioli

Phone: (859) 334-3333

www.bonfiglioli.com

Siemens Industry, Inc.

INTRODUCES SINAMICS V20 SMART ACCESS WEB SERVER MODULE

Siemens announces the launch of its Sinamics V20 Smart Access web server module, designed to mount directly onto the drive, transforming a mobile device or laptop into a virtual operator panel for drive control. By providing a wi-fi hot spot, the wireless connection on this module facilitates setup, programming, commissioning, production monitoring and maintenance on a variety of machines and production equipment.

A simple, embedded graphical user interface (GUI) enables easy use of the Sinamics V20 in every phase of operation. No separate app is required, nor is a written operator manual needed, making operation of this new server module and subsequent drive control highly intuitive and easy-to-learn.

Smart Access provides convenient access to the Sinamics V20, up to 100 meters away, even when the drive is located in difficult-to-access installations. Utilizing WPA2 security, the web server module offers full flexibility with both iOS and Android operating systems, along with commonly used HTML5-capable web browsers such as Chrome, Safari, Internet Explorer and others.

A built-in, multi-color LED provides quick communication status readout. Security features enable limit / restrict operator access and control functionality.

In use, the Sinamics V20 Smart Access module requires only a few steps to set-up and no installation or download of additional software is needed. The onboard Quick Set-up Wizard provides users a fast and easy commissioning procedure, enabling all the following: motor data can be entered and checked, connection macros for digital inputs/outputs can be activated, application macros can be selected and activated for pumps, fans, compressors and other devices plus the common and frequently used parameters on the drive can be set for motor start, acceleration, deceleration, min./max. speed, etc.

Smart Access allows monitoring of the drive status including speed, current, voltage, temperature and power, as well as drive servicing, with an overview of alarms, faults and individ-



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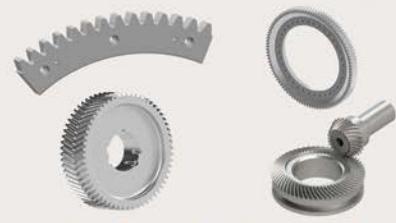
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ual values. Fault codes can be transferred via e-mail to a local service provider, while the immediate status of all digital and analog inputs and outputs can be checked at a glance. Parameter adjustment, motor test functions and full data back-up, storage and sharing with fast firmware downloads can all be accomplished via the web server.

For more information:

Siemens Industry, Inc.
Phone: (847) 640-1595
www.usa.siemens.com/sinamics-v20

Cooper

INTRODUCES QUICK-CHANGE BEARING PEDESTALS

New SAFQ inch-series Cooper Quick-Change angled bearing pedestals are now in stock for immediate delivery as quick change-out replacements for industry-standard pillow block housings. Their unique design consists of two split halves enabling easy assembly around a fixed shaft. In



addition, the pedestal's innovative angled bottom-half simply slides under a shaft – even one with low clearance – without requiring a jack or hoist. Typical applications include fans and similar rotating machinery in the mining, marine, steel, power generation industries, and many others.

The SAFQ Series pedestals are available for shafts with diameters from $2\frac{3}{16}$ " to $5\frac{5}{16}$ " and join the SNQ and SDQ metric series of Cooper brand solutions as practical and time-saving alternatives to standard pillow-block housings (SAF500, SN500, and SD3100 series). All integrate standard Cooper 01, 01E, 02, or 02E split-to-the-shaft bearings and are interchangeable with other Cooper split roller bearing pedestals.

Among key pedestal advantages, the split-to-the-shaft roller bearings simplify disassembly and reduce time needed for installation, changeover, and inspection; an exclusive Aluminum Triple Labyrinth seal remains concentric and rotating on the shaft to prevent ingress of contaminants, even under water; spherical cartridge and pedestal design compensate for misalignment; a clamped inner race protects against shaft wear and the absence of set screws prevents shaft damage; and a polished outer race and rollers allow for dynamic axial expansion to minimize resistance and stress on other components.

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