

Flux-cored wire

The UltraCore line of gas-shielded, flux-cored wires for mild steel welding from **Lincoln Electric** features six products for smooth and stable arc performance, each designed for



a particular shielding gas mix, group of welding positions, or industrial applications. The 71A75 Dual general-purpose wire delivers a stable arc, low spatter, and smooth bead. UltraCore 71A85 is suitable for high argon mixed gases welding in shipbuilding and structural fabrication. The 712C was designed for tank and shipbuilding applications using straight CO₂; 71C for economy welding with straight CO₂ shielding gas in shipbuilding and barge applications. UltraCore 712A80-H can achieve low hydrogen levels for tough applications in heavy equipment, offshore, or pressure-vessel applications.

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Fine hole machine

The EDGE2 Ram electric discharge machining (EDM) machine from **Makino** offers a fine hole option with the ability to burn holes as small as 0.0012 in (0.03 mm) using tungsten rods 0.0008 in (0.02 mm) in diameter. Using 0.0008-in (0.02-mm) sapphire die guides and a high-speed spindle, length-to-diameter ratios of 10-to-1 to 15-to-1 are



achievable. The EDGE2 can be converted from a fine hole function to standard Ram EDM functions in less than 5 min without changing dielectric fluid. Capable of 60-A burning, the machine is offered with an eight-, 16-, or 24-station automatic tool changer. An intelligent monitoring system measures the length of the electrode after each hole burn, and orbiting capabilities size and shape specific hole diameters to generate tapered or flared holes. Other features include a heavily ribbed, single-piece casting and heavy-duty construction as well as a mass of 6000 lb (2700 kg).

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Roller pinion system

Technology featured on the Precision Roller Pinion System (RPS) from **Nexen Group** converts rotary motion into a precise, backlash-free linear motion while operating at high speeds over long distances,

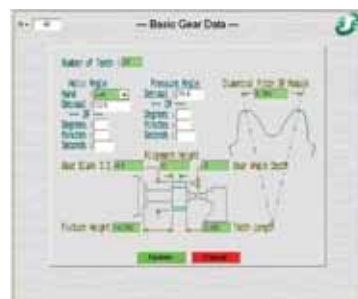


according to the company. The RPS features a tooth design combined with bearing-supported rollers that move smoothly along the face of each tooth, offering improved performance and longer life. The system can be configured to various distances using segments of rack, and it maintains positioning at speeds up to 660 m/min (2165 ft/min) without creating heat or wear on components. The RPS is suitable for machine tools, servo-controlled fixtures, and grinding and milling machinery.

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Gear manufacturing

Num's Axium Power CNC system addresses all aspects of gear manufacturing, according to the company. The solution features embedded conversational/graphical operator interface (HMI) and machining



cycles for gear hobbing or grinding and automatic gear/tool alignment. Benefits include reduced software development time and a decreased learning curve for the operator. The PC- or CNC-based interactive HMI allows the operator to program the machine without independent system operator code programming knowledge, and online step-by-step video tutorials facilitate operation.

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Cutting system

Thermal Dynamics offers the CUTMASTER 151 air plasma cutting and gouging system as part of the CUTMASTER 1 Series cutting systems family. The 151 is a robust, 100-A system designed to deliver



precision cutting and high speed on a range of material up to 1.5 in (38 mm) thick and is suitable for heavy fabrication, maintenance, and manufacturing environments that deal with thick plate such as scrap yards, mining, and ship yards. The inverter-based system operates on either single- or three-phase input power for improved energy efficiency. Standard components

include a plasma torch and advanced torch connector quick disconnect for process changes.

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Laser line sensor

LMI Technologies offers a digital imaging laser line sensor for high-resolution 3-D cross-sectional profile scanning of up to 150 points across a horizontal measuring line. The ethernet-ready user Datagram protocol Class II EyeCON laser line sensor processes data by combining digital technology, image processing, and laser line projection. Features include quick measurement of material and equipment variations across dimensions, improved operator control for throughput, and reduced waste and improved production control for uniformity and product quality. Standard frame rates are up to 30 frames/s at an exposure time of 15 ms, and the sensor has an operating temperature range of 0 to 50°C (32 to 122°F).



For more information, circle 272

Alignment system

The multi-purpose Microgage 2000 Linear Universal Alignment Kit system from **Pinpoint Laser Systems** measures and realigns rolls and web systems, uneven travel on CNC machine tools, extrusion casings, and misaligned bore tubes. Components include a four-axis laser mount combined with a Microgage laser for pointing, adjusting, and positioning. An electronic receiver catches the laser light along the beam path, and the display offers a digital readout accurate to 0.0005 in (0.0127 mm). A right angle attachment allows the laser beam to be redirected for squareness and for parallel measurements. Applications include shipbuilding and machine shops; optional accessories are available.



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Portable scale

Measurement Systems International updated the MSI-4300 Porta-Weigh Plus Electronic Crane Scale by adding a rechargeable 12-V sealed lead acid battery and an LED backlit display. The battery adds up to 300 h of operation between charges, while the large, six-digit, 1.6-in (40-mm) alphanumeric liquid crystal display with LED back-lighting is readable from a distance. Digital calibration and self-diagnostic circuitry improve maintenance. The MSI-4300 is available in nine standard capacities ranging from 500 to 100,000 lb (227 to 45,360 kg), and various options are offered including an infrared remote controller and low headroom adapters.



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Flat bed lathe

Dean, Smith & Grace

has updated the 2000 Series flat bed, heavy-duty CNC lathes and extended the range of the 2817 model, featuring improved swing capacities and bed length suitable for turning applications within the oil and gas production sectors. Upgrades to the 2000 Series include an extended available swing of 610 to 762 mm (24 to 30 in), an updated livery, and full guarding. The 2817 model incorporates a 700-mm (28-in) swing over bed, 432-mm (17-in) swing over cross-slide, and a 3800-mm (150-in) bed length, suitable for turning large diameter shafts and discs. The **Siemens** 840D standard control offers improved programming and production flexibility. Other features include a digital axis, spindle drives and motors throughout, and a 12-station Sauter auto-indexing turret.



For more information, circle 275

Tooling package

Two tooling packages offered by **Heartech Precision** were designed to cost-effectively allow manufacturers to provide flexibility when tooling up new machines as well as to provide job shops



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with the ability to handle a variety of machining specific to that business. The CAT40 and BT40 tool holder shanks include a variety of HEM end mill holders, ER collet chucks, and a shell mill holder. The value package plus includes the same items as the standard package as well as additional collet sets and the necessary wrenches for the tool holders.

For more information, circle 276

Milling cutters

Expanding the line of ValMILL V590 Series end mills and face mills that machine true 90° surfaces, **Valenite** now offers a 16-mm (0.63-in) cutting length insert option in addition to the existing 7-, 10-, and 13-mm (0.28-, 0.4-, and 0.5-in) sizes. The robust sized tooling improves both the cutter and the insert strength, allowing for deeper cuts and increased stock removal. A unique shape provides improved ramping results and minimal witness lines where overlap occurs in deep pocket milling applications. The group offers an array of options to fit most application requirements with 29 tools, 15 inserts, and five grades available. The square shoulder mills were designed for multi-task cutting including roughing, semi-finishing, and finish machining for applications such as shoulder milling, pocket and channel milling, edge trimming, and face or surface milling.

For more information, circle 277

Walk-in oven

Grieve's No. 920 is a gas-heated, 500°F (260°C) walk-in oven used for curing rubber parts. Workspace dimensions measure 52 x 48 in (1321 x 1219 x 1219 mm), and 350,000 Btu/h are installed in a modulating gas burner. A 120-m³/min, 3-hp (2.24-kW) recirculating blower provides horizontal airflow to the workload. Other features include a stainless steel exterior, type 430 stainless steel interior with backwelded seam construction, 4-in (102-mm) thick walls, and a top-mounted heating chamber designed to conserve floor space. A motorized damper on the exhaust accelerates the unit's cooling, while the scrubber uses recirculated water sprayed by a 1.5-hp (1.12-kW) pump into the exhaust to remove particles. Workloads are carried on the unit's dual shelf trucks, each with channel supports on 3.5-in (89-mm) centers, and a transfer dolly with latches for easy loading and unloading is provided.

For more information, circle 278



Automation components

An eight-page color brochure from **Bosch Rexroth** offers an overview of the company's automation components and systems based on flexible and modular layered architecture. Included are motors, drives, controls, human-machine interfaces, I/O, and software that provide drive-, power line carrier-, or CNC-based automation solutions. The brochure also details how components are matched to the complexity of an application to provide a system-level solution. Scalability allows a single architecture/development environment to be adapted to a range of needs. Rexroth's open systems support industrial communication protocols including Profibus, CANopen, and ethernet.

For more information, circle 279



Industrial interferometer

Polytec offers the TMS-300/320 TopCam, a high-precision white light interferometer for on-line part inspection and production/quality control. The compact interferometer installs on a manufacturing line and verifies production part specifications for flatness and topography. Telecentric imaging—along with a Michelson interferometer, precision scanning system, and a digital camera—produce quick measurements over fields-of-view diameters up to 19 mm (0.75 in) with resolution up to 10 nm (0.4 μm). The TopCam can be mounted in any direction and can be controlled via operator-interface software, which includes commands for instrument operation, data acquisition, analysis, and presentation.

For more information, circle 280



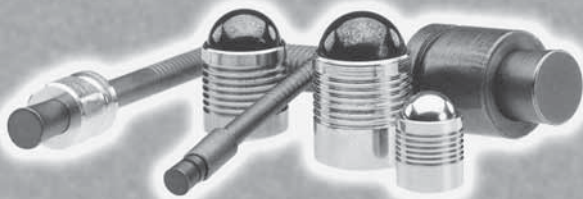
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Damping equipment

ROSTA tensioners, damping, and vibration-limiting parts and equipment from **Lovejoy** are designed for the aggregate and mining industries. Oscillating mounts contain precisely fit elastomeric elements that typically perform for a minimum of seven

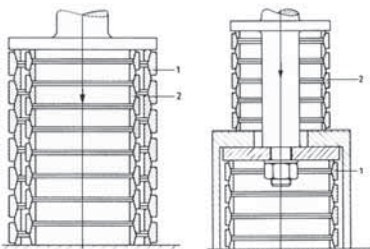


years under rigorous conditions. Rubber suspension elements replace metal springs and spring and bearing combinations, reducing component and assembly cost, while improving product reliability and performance, according to the company. The elements eliminate the need for lubrication, avoid failures caused by moisture and rust, diminish audible noise associated with moving metal parts, and are maintenance free.

For more information, circle 281

Friction springs

Ring-spring shock absorbing friction springs from **Ringfeder** protect structural components in various industrial applications. Used to absorb and damp the high kinetic energy of a moving mass in small



spaces, Ring-springs are featured in pneumatic hammers, buffers, end stops, and shock absorbers. The design attracts up to 67% of the input energy and returns it as heat. The uniform distribution allows stresses to be consistent over the entire cross-section, permitting full use of the material in a minimum amount of space and improving energy absorption. The Ring-springs can withstand temperatures

from -40 to +180°F (-40 to +82°C) and are available with standard configurations from 0.5 to 30 in (12.7 to 762 mm) in diameter and with end forces up to 1,000,000 lb (4450 kN).

For more information, circle 282

Rupture disk

Oklahoma Safety Equipment has added the PRO+ (precision reverse operating) high-performance disk to its rupture disk line. PRO+ functions at high operating ratios and is suited for liquid or gas ser-



vices in the agricultural and other industries. Features include a 95% operating ratio to guard against fatigue and premature disk rupture, a long service life, an operating temperature range up to 900°F (482°C), and burst pressure range from 8 to 750 psi (0.55 to 52 bar). The one-piece disk performs in both high- and low-pressure environments and operates without the use of a supplemental cutting device. A perimeter-scored design offers scoring on the vent side to provide a smooth surface and prevent product buildup. Diameters of 1 to 4 in (25 to 102 mm) are standard; custom diameters are available, and the disk is offered in stainless steel, nickel, Inconel, and Monel.

For more information, circle 283

Air plasma cutting

Thermal Dynamics' Automation CUTMASTER 51 air plasma cutting system is a 40-A machine for cutting thin-gauge metal including thin-gauge production fabrication and HVAC sheet metal work. It is equipped with the SL100 1Torch plasma torch that may be fitted with a range of cutting tips designed for maximum gas management and optimum performance. The



advanced torch connector provides quick disconnect for instant change-outs. The system is rated for 0.25-in (6-mm) production capacity and 0.625-in (15-mm) edge-start capacity. It is suitable for cutting materials such as aluminum, stainless steel, and mild steel.

For more information, circle 284

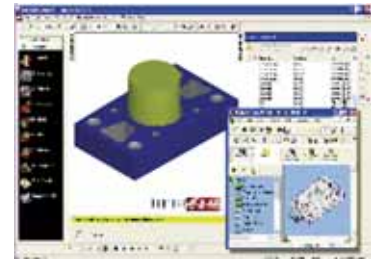
Spindle alignment kit

The Microgage spindle alignment kit from **Pinpoint Laser Systems** is a spindle and shaft alignment kit for industrial machinery. The kit consists of a laser that is mounted to the drive-shaft, spindle, or a gearbox flange and projects a precise reference beam along the centerline. A digital target receiver catches the laser beam and provides a measurement reading to show if the receiver is off-center. Angular errors can also be measured and eliminated. The system measures misalignments as small as 0.0001 in (0.0025 mm) and operates over distances of 80 ft (24 m) for large machinery applications.

For more information, circle 285

Computer-aided manufacturing

FeatureCAM 2005 from **Engineering Geometry Systems** introduces a higher level of data integrity and communication



when CAD design files are imported into CAM. Preserving the CAD data inherent in a design file is critical to manufacturing the best parts. The new Import Wizard in FeatureCAM 2005 streamlines the import and placement of part files, making it easy to begin programming parts immediately. The wizard steps users through the entire process with several options that establish the machining direction, stock size, and the part program zero location. Advanced hole feature recognition and expanded CAD importing are also included in the new release.

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