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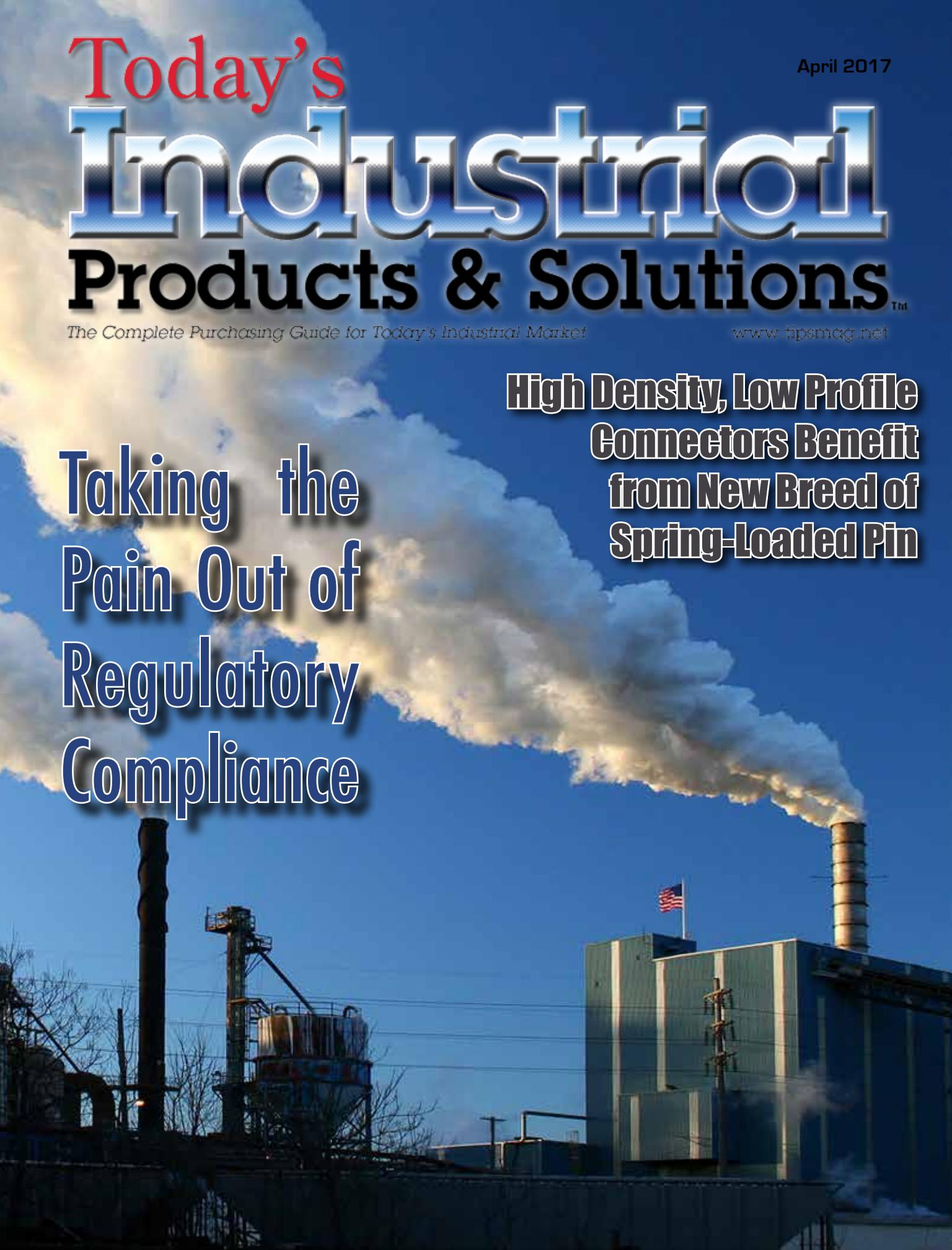
April 2017

The Complete Purchasing Guide for Today's Industrial Market

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Taking the Pain Out of Regulatory Compliance

High Density, Low Profile Connectors Benefit from New Breed of Spring-Loaded Pin



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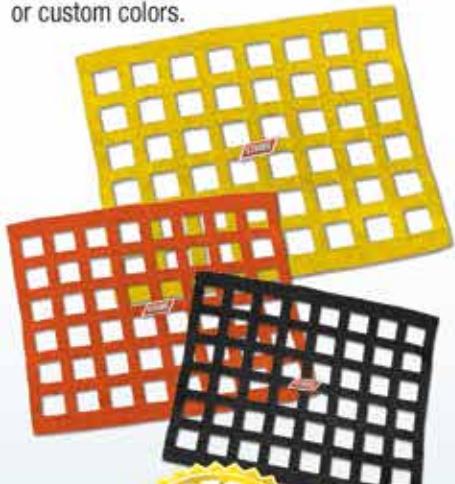
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Precision Stamping has experienced a steady increase in production output since it started using the custom Flex-Hone. In one six-hour period, operators were able to run 8,000 pieces and not one needed additional deburring.



Deburring Piercings with a Customized Flexible Hone

Deep draw stamping operation turns to custom honing tool to deburr piercing holes in house, instead of sending parts out



For metal stamping operations, the very nature of the shearing process used to create intricate, tight tolerance piercings inevitably creates burrs requiring a secondary finishing step to remove them. This is particularly true for parts with wall thicknesses in excess of 0.005 inches, which often results in heavier burrs.

As a result, stamping operations must decide how to most efficiently remove the burrs.

For many, this means manually deburring each part in house. However, finishing, smoothing, and removing

burr by hand not only significantly increases the manufacturing time but is also prohibitive in terms of labor and employee ergonomics. For large production runs, this option is even less viable.

Another alternative is to send parts out for a secondary finishing step, such as thermal deburring or tumbling. While these techniques effectively remove excess material, this increases the time to ship and return the parts as well as the added cost. Both techniques are also known to mar the surface of the part.

For Jesse Parke of Precision Stamping



A: Precision Stamping pierces holes in these formed shells using complex machinery with tight tolerances and intricate piercings which creates challenges when it comes to deburring.

B: Known throughout the industry as the ball hone, the Flex-Hone is used prominently in CNC machining operations for deburring and surface finishing of metal parts with cylindrical bores or through-holes.

C: After the parts are stamped and cleaned, they are transferred to a nest for piercing.

D: The Flex-Hone from Brush Research Manufacturing is a self-centering, self-aligning, and self-compensating tool featuring abrasive globules attached to flexible filaments along a central shaft and can be used in any rotating spindle.

Co. of Howell, Michigan, a company that specializes in deep drawn parts, this left him with only one alternative: finding a more efficient and inexpensive method to complete the deburring work in house.

Founded in 1946, Precision Stamping specializes in deep drawn metal parts for automotive, industrial, and military parts providers worldwide. The company, among the largest of its kind in the Midwest, primarily produces products such as oil-cooler lines and quick disconnects for the automotive industry.

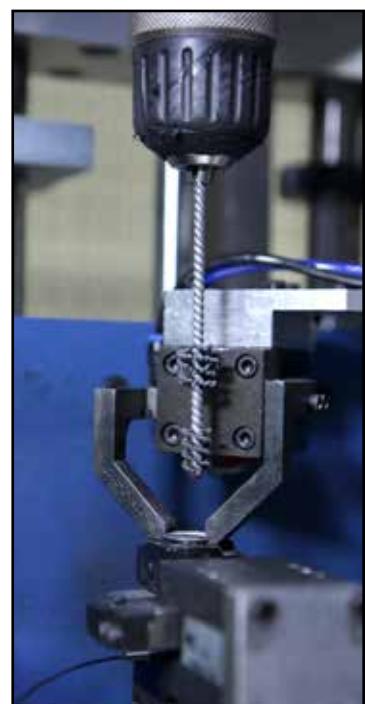
According to Parke, a third-generation stamping engineer, Precision Stamping can pierce holes in sheet metal blanks and formed shells using complex machinery and setups that are “flirting

on the edge of what’s possible and what’s wishful thinking.”

However, the production of hundreds of thousands of stamped parts with tight tolerances and intricate piercings – of as low as 0.078 on one recent job – still creates challenges when it comes to deburring.

Parke points to one particular recent part, a spring cup that required a unique solution. Like many deep drawn parts, the part was flared at the top with a narrower diameter for the body. The part specification included piercing a hole in each of the “stepped” sections, leaving a heavy burr.

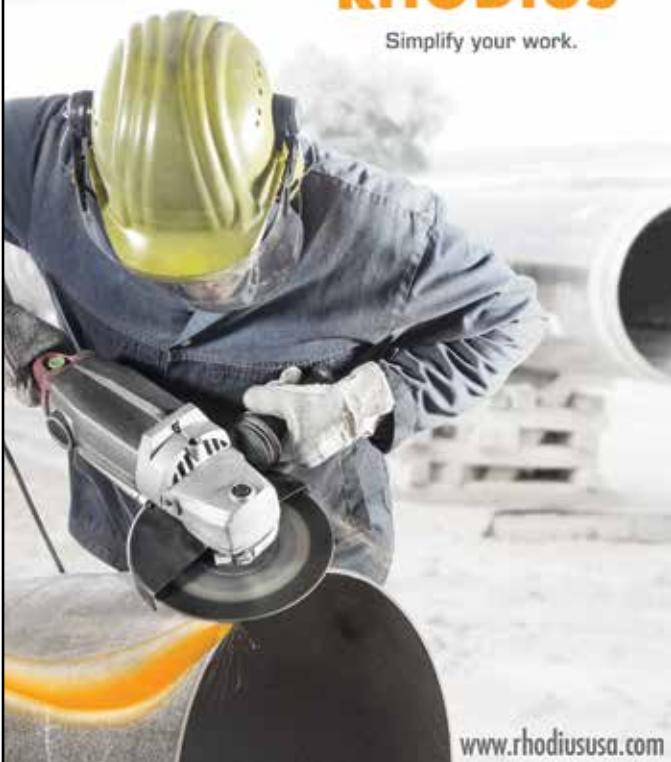
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Stamping initially opted to send the parts for thermal deburring, a process that removes the excess material by vaporizing and burning it off. However, this step takes additional time, vendor expense, shipping expense, and often required cleaning off black carbon residue once the parts were returned to the shop.

Eager to discover a more efficient alternative, Parke began to explore and research options to keep the parts in house. Although he was initially unable to find a viable option, in 2015 at a trade show, a colleague recommended the Flex-Hone from Los Angeles-based Brush Research Manufacturing.

The self-centering, self-aligning, and self-compensating Flex-Hone features abrasive globules attached to flexible filaments along a central shaft and can be used in any rotating spindle.

Commonly known throughout industry as the ball hone, the Flex-Hone is used prominently in CNC machining operations for deburring and surface finishing of metal parts with cylindrical bores or through-holes. Although it is often used with automated equipment, the abrasive tool can also be used with a drill.

The product is sold through a worldwide network of distributors and is available in a broad range of sizes, abrasives and grits. However, for this particular application, none of the standard options would work for the spring cup, due to its two-stepped design.

So Parke decided to contact Brush Research and explain to the company's engineering solutions department that this job required a "stepped" hone that would work with the specific dimensions of the part.

"With the part being stepped, I was not sure if we would need a custom brush or what the ideal choice would be," explains Parke.

As the inventor and manufacturer of the Flex-Hone, the company has the knowledge and capability to create custom hones to meet the needs of unique applications. This can include custom sizes – from

extremely large diameter to miniature – as well as unique configurations, such as tapered or stepped.

According the Parke, the company responded quickly with a tool that met their needs.

Now, after the parts are stamped and cleaned, they are transferred to a nest for piercing. When that is completed, they are moved to another nest, where a stepped Flex-Hone is inserted and rotated using an automated pneumatic drill. The same operation is repeated in the opposite direction to ensure maximum deburring as well as maximize brush life. The part then drops through an escapement in the machine as finished goods.

Since Precision Stamping started using the custom Flex-Hone, Parke said they have experienced a steady increases in production output. In one six-hour period, operators were able to run 8,000 pieces and not one needed additional deburring.

"The Flex-Hone is definitely helping us keep costs down by not having to send parts out for thermal deburring," he said. "If you don't have to do that, you've saved all the part-handling time and saved all that money."

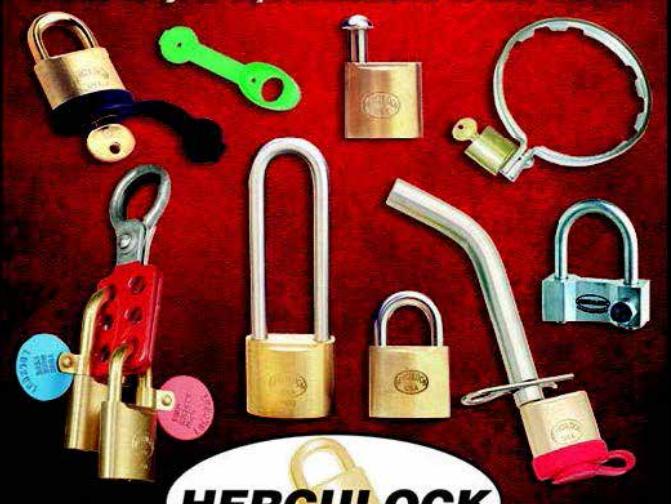
Parke said that all told, the improvements have been significant. "Now we can deburr in house and they look ten times better than what we were getting before after the thermal deburring."

Since the jobs that make it to Precision Stamping are the more complex, technical ones, with the simpler open-tolerance jobs going overseas, Parke said he expects to use custom Flex-Hones for future customer jobs as well: "I see that only increasing as we match the correct Flex-Hones with the correct tooling."

For more information, contact Brush Research Manufacturing, Brush Research Mfg. Co., Inc., 4642 Floral Drive, Los Angeles, CA 90022; Phone: (323) 261-2193; Fax: (323) 268-6587; email: info@brushresearch.com

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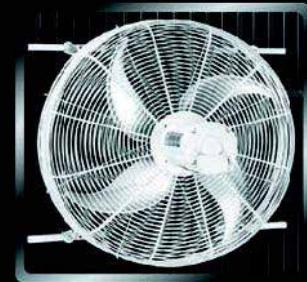
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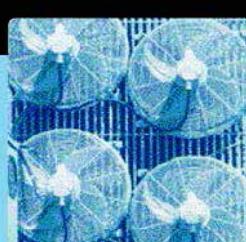
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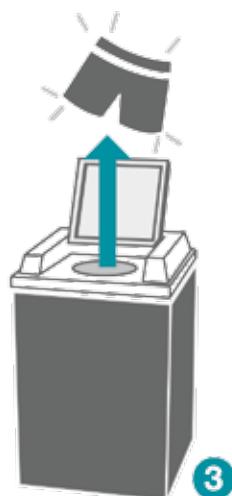
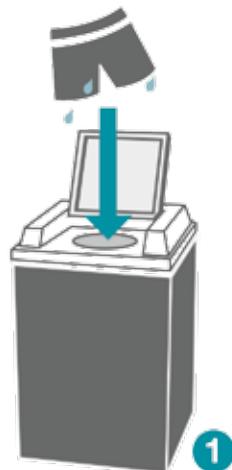


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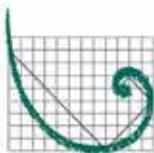




Regulations can be complicated, but they don't have to be. RegScan's WIKI feature provides clear analysis on the newest and most important environmental regulations in easy-to-follow articles authored by subject matter experts. The article-based system explains key provisions and requirements so users can proactively stay transparent while preventing and mitigating risks.



- Icon displayed next to reviewed regulations in the RegScanOne database
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- Full-text regulations located next to abstracts and articles



ERM

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Revised Ambient Air Monitoring Quality Assurance Requirements

ABSTRACT

The revised air monitoring quality assurance requirements are EPA's first comprehensive changes to the air monitoring rules since 2006. These changes formalize many changes that had been informally adopted by Agency memorandum and guidance documents. Many of the changes were driven by improved monitoring technology—such as continuous particulate matter analyzers—that were not commonly available at the time of the previous update.

The revised rules also revert to the pre-2006 structure whereby state and federal monitoring program requirements are set out in Appendix A, with industrial PSD monitoring requirements specified in Appendix B. EPA provides a summary of the changes at the following URL:

https://www3.epa.gov/ttnamts1/files/ambient/pn25/Summary_of_Appendix_A_Changes_N203_25_2016.pdf.

ARTICLE

Key Changes

The revised regulation once again separates the quality assurance requirements applicable to state and federal monitoring programs from those for industrial PSD monitoring. This change recognizes the many differences in the objectives and implementation approach between the state and industrial monitoring programs. Other significant items include:

- Increased emphasis on the role and responsibilities of the Primary Quality Assurance Organization (PQAO)
- Requirement that EPA be provided a courtesy copy of an organization's Quality Assurance Project Plan (QAPP), even if that PQAO has been delegated QAPP review authority by EPA
- Clarification of the applicable system and performance audits and required frequency for each type of monitoring program
- Updated calibration and audit ranges for gaseous analyzers

Impacts On Existing Monitoring Monitoring Programs

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With a dedicated staff of experts in four U.S. states and Washington D.C., and an ever-growing network of in-country resources, RegScan can always be counted on as a trusted resource for up-to-date regulatory information from every corner of the globe. RegScan has consistently outpaced a growing league of competitors in the industry niche we inceptioned, by offering unique solutions to our Fortune 1000 customer base. Whatever business you're in, we can assist you with your compliance needs. Our vast product line includes online compliance solutions for a variety of industries:

- Manufacturing
- Transportation
- Energy
- Chemicals and more!

RegScan's unique online tools enable easy access to, and interpretations of, global environmental regulations and operational standards. Do your research and get your alerts through the RegScan One system, or have your content exported via web services to any online environmental management system. Users of the RegScan One system can create custom legal registers and audit protocols for more than 140 jurisdictions. Access the interface in five languages:

- English
- French
- Spanish
- German

Educational Resources

Webinars

RegScan understands that staying in compliance is critical. But it doesn't have to be complicated. That is why we host webinars several times throughout the

year that help our clients tackle ever-evolving problems in the EHS industry. Prior topics covered included regulatory overviews, the Changing Role of the EHS Manager, and ISO 14001:2015. Such topics specifically address the newest industry standards while banishing compliance confusion, provide necessary tools to manage today's EHS challenges and reduce time and money spent on compliance activities.

Tutorials

RegScan also produces a number of helpful videos for our users. They answer most commonly asked questions on using the RegScan One interface. You may wish to visit our Informational & Tutorial Videos Page prior to submitting a ticket to see if your question can be answered with the assistance of one of these videos.

Conference

And now RegScan has gone beyond the computer screen to bring partners and clients their first ever Inaugural Regulatory Conference. Government officials, regulatory experts and executives from Fortune 1000 companies will gather on Capitol Hill in Washington D.C. on May 24th-25th, and be among the first to learn what the Environmental Protection Agency has planned for 2017 and beyond. And with RegScan, sometimes it is all fun and games. We're taking everyone out to the ballgame with box seats for the Washington Nationals as they host the National League Champion New York Mets.

Tracking Regulatory Change

Strikethrough

Strikethrough allows you to effortlessly see the amendment history of a regulation by comparing the current regulation with an earlier or future version. Changes are easily identified by color-coding.

Anything that has been added will appear in green, while anything that has been deleted will appear in red.

My WatchList

My WatchList is a custom regulatory change management tool that allows you to monitor change at various levels of detail. It gives you quick access to only the information you need, while providing a clear record of what you have and haven't reviewed. My WatchList is the easiest way for a Web Services user to build a custom regulatory register, which RegScan will automatically export to your online environmental management system.

LookOut Email Alert

By defining specific keywords or phrases, LookOut allows you receive daily Email alerts on State or Federal regulatory changes.

RegScan Customer Support

As part of our ongoing commitment to improve the RegScan user experience, we use a ticketing system for customer support inquiries. This allows us to streamline requests and better serve you. Available 24/7, the ticketing system

allows you to immediately report an issue and track the support team's response to it. Every support request is assigned a unique ticket number. For your reference, we provide complete archives and history of all your support requests. A valid email address is required to submit a ticket.

Schedule a Demonstration

The RegScan team will gladly demonstrate any of our products or services for free. Our online demonstration sessions can accommodate up to 25 people, and we will schedule a meeting whenever it's convenient for you. During these interactive demonstrations, our experienced staff will go through whatever products or services interest you. You'll also have the opportunity to ask questions, and discuss licensing options that are tailored to your needs. If you decide to purchase, we can take of your training and support needs too. We frequently update our library of training videos, and we'll be happy to arrange online or in-person training sessions. Furthermore, our in-house technical support team is always available on weekdays (except for holidays) between 8 a.m. and 8 p.m. Eastern time, and online 24/7.

To learn more about RegScan, please call +1 570-323-1010, or Email info@regscan.com.

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The screenshot shows the RegScan ONE software interface. At the top, there's a navigation bar with icons for file operations, search, and user profile. The main content area features the 'RegScan ONE' logo and the tagline 'One World, One Platform'. On the left, there's a sidebar with a tree view of regulatory categories: United States (Federal, State, Federal Register, State Registers, Regulatory Change Services, BIA, Environmental Analysis, CheckPoint, Energy Audit Protocols), U.S. Team Sales, Tailored Standards Collection, Global (Africa, Americas (Latin America and the Caribbean, Northern America (Canada, Mexico, Central America), Europe, Oceania)). Below the sidebar, there are several news feeds:

- RegScan Socrates Alerts:** No Updates Today
- ELR Global Update:** No Updates Today
- LookOut Update Federal:** Table of Contents/Federal Register Vol. 81, Issue 48, Friday, March 11, 2016. CENTERS FOR DISEASE CONTROL AND PREVENTION:
 - NOTICES: Recent data collection submitted for public comment and recommendations. Pages 12900-12901 [FR Doc# 2016-05520]. [View Full Article Matching: Medicare \(2 hits\)](#)
 - Summary: The Centers for Disease Control and Prevention (CDC), as part of its continuing efforts to reduce public burden and maximize the utility of government information, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collect...
- CENTERS FOR MEDICARE & MEDICAID SERVICES:**
 - NOTICES: Agency Information Collector Activities: Submission for OMB Review; Comment Request. Pages 12903-12904 [FR Doc# 2016-05472]. [View Full Article Matching: Medicare \(6 hits\)](#)
 - Summary: The Centers for Medicare & Medicaid Services (CMS) is announcing an opportunity for the public to comment on CMS' intention to collect information from the public. Under the Paperwork Reduction Act of 1995 (PRA), federal agencies are required to publish notice in the **Federal Register** co...
- Agency Information Collector Activities: Proposed Collections; Comment Request:** Pages 12904-12905 [FR Doc# 2016-05471]. [View Full Article Matching: 2016-05471 \(5 hits\)](#)
- Agency Information Collector Activities: Proposed Collections; Comment Request:** Pages 12904-12905 [FR Doc# 2016-05472]. [View Full Article Matching: 2016-05472 \(5 hits\)](#)
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How the Multi Gas Clip Simple works in inert environments

Detectors that use pellistor/catalytic bead type LEL sensors require oxygen to be present to perform the necessary heating process to detect combustible gas. The **Multi Gas Clip Simple**'s infrared LEL sensor needs no oxygen to detect combustible gas. **It detects with an infrared beam of light**, so there is always an accurate reading in oxygen enriched or oxygen depleted environments.

Benefits of the infrared LEL sensor

Key disadvantages of the pellistor/catalytic bead LEL sensor include: the sensor's fragile bead and filament could break if the detector is accidentally dropped, it has a tendency to heat up and burst when suddenly exposed to high levels of gas and it can be poisoned over time with exposure to typical sensor poisons such as H_2S or silicones. The infrared LEL sensor in the **Multi Gas Clip Simple** **has no fragile filament or bead to break, burst or get poisoned**. The continuous self-test function and fail-to-safe features of the infrared LEL sensor provide assurance of protection. **If the infrared LEL sensor is unable to detect gas for any reason, the detector immediately notifies you**. With the **Multi Gas Clip Simple**, you will know that you are always protected.

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Hearing Protection That You Want To Use

Exposure to environmental noise is one of the leading causes of hearing loss throughout the world. Every day we are flooded with transport, industrial and recreational noises. Some have the added hazard of excessive noise in the workplace, like a construction site or warehouse. This constant exposure wears down the delicate nerve hairs in the inner ear in the same way a toothbrush bristles wear down over time.

That damage is irreparable. When it comes to hearing, once it's gone, it's gone. So, how can we protect our hearing and preserve it, regardless of environmental noise?

Hearing loss can be prevented by simply wearing good quality noise protection.

If you are one of the 30 million workers exposed to hazardous levels of noise on the job, hearing loss is likely already happening. While you can't always control the noise, you can control how you protect yourself. Protective ear buds, plugs or earmuffs that provide Noise Reduction Rating (NRR) of 20 or more can block out a significant percentage of damaging noise.

To best understand what damaging noise is, we need to talk about decibels (dB),

or the way we measure sound intensity. On one end, 0 dB is barely audible sound. A normal conversation hovers around 55-65 dB. From there, we move into the higher ranges.

Highway traffic results in around 75 dB and something as simple as a hairdryer accounts for 85 dB. A lawnmower garners 95dB, then it's around 130 dB for jackhammers and up to 140 dB for firearms or a jet engine. Construction sites, as you can imagine, often creep up over 100dB on a regular basis.

So how loud is too loud? Well, if you are exposed to levels at or over 85 dB, particularly for a prolonged time or on a regular basis, you're at a high risk of hearing loss.

Our audiologist recommended audio lines that incorporate noise control technology to offer a number of benefits to keep your hearing safe. For example, the ToughTested line:

- carries an Noise Reduction Rating of up to 26 dB
- can reduce the influence of environmental and background noise by up to 30%,

- has a microphone for hands free communication
- is compatible with smartphones

Most importantly, they help to protect against hearing loss, tinnitus, and the daily stress of excessive noise by dampening loud vibrations before they can damage your hearing. By blocking out such a large amount of environmental noise, using the earbuds allow you to keep music and conversations to safe, hearing-preserving level.

We've all heard the old adage that an ounce of prevention is worth a pound of cure. One place where that is certainly the case is with hearing protection. Don't take your hearing for granted, keep it protected and safe for years to come.

ToughTested (toughtested.com), a leader in audio and power solutions for smartphones and portable devices, put together a piece of contributed content dedicated to hearing safety and what busy workers on the job, driving delivery or snow trucks this winter season should be doing to protect their hearing.

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High Density, Low Profile Connectors Benefit from New Breed of Spring-Loaded Pin

Connector manufacturers are turning to more affordable H-Pins over traditional pogo-style options without sacrificing performance

For decades, connector manufacturers have relied on traditional spring-loaded, or pogo-style pins, to provide highly compliant, reliable interconnections.

Although expensive, these highly compliant pins are used to connect batteries to docking stations, antennas to PCBs, for rugged, high-shock and vibration applications, or to compensate for floating heights and uneven mating surfaces.

However, with the market drive to continually pack more electronics into ever-thinner, shrinking packages, spring-loaded connectors are playing a new role: as a space-saving device to reduce the real estate occupied by the connector itself.

Even when miniaturized, connectors with traditional male

pins and female receptacles take up valuable space. This is opening the door for compression-style board-to-board and board-to-device connectors that utilize spring-loaded pins mounted against pads or gold-plated lands on the PCB. This approach can be used to create mezzanine-tiered board modules as well.

Trouble is, with hundreds of millions of spring-loaded pins required to produce these connectors, the high cost of traditional pogo-style pins remains a considerable barrier.

As a result, connector manufacturers are turning to a new breed of miniaturized spring-loaded pins as small as 0.2mm that reduces costs by 30-50%. These new pins deliver high performance in a highly compliant contact that – unlike pogo-style pins – are manufactured in a fully automated,

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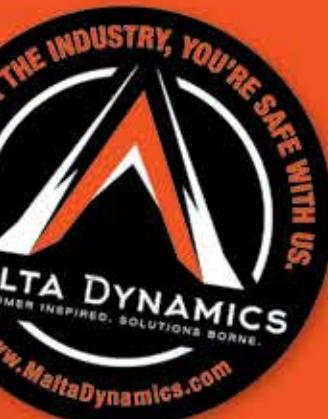
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Pogo-style pins

For decades the spring-loaded probe, also known as the pogo-style pin, has delivered excellent mechanical and electrical performance. However, this often came at a high cost.

Although designed and manufactured in subtly different ways, the pogo-style pin is typically constructed of 4-5 components that includes a drawn barrel, a wound spring, two screw machined plungers, and some means to bias the plunger to the barrel.

Depending on volume, the traditional pogo pin is either assembled completely by hand or with semiautomatic process steps with pins hand-shuttled from process to process.

As a result, the market stopped using pogo pins for all applications other than the most critical applications that could afford the premium costs.

Instead, many connector manufacturers turned to alterna-

tives such as bend, buckle, or cantilever-style contacts that require additional space between pins during compression.

However, this approach is not viable for fine pitch applications – defined as the number of pins in a small area or the distance between pin centers – required for today's high density electronics.

Spring-loaded pins, on the other hand, operate in a purely vertical or horizontal fashion, so the maximum space occupied at any time is defined by its diameter. This allows for placement of spring-loaded pins in fine pitch distances as low as .2mm.

H-Pins

The H-Pin, on the other hand, is made using two stamped contact beams (sometimes symmetrical) and a wound spring in a fully automated, high speed assembly and inspection process.

The highly compliant pin has a working range up to 1mm with a flat spring rate and can be utilized up to 15GHz with -1.0dB loss, carry up to 4 amps of current and withstand temperatures up to 200°C.

However, it is the way these pins are manufactured that is the most striking difference. Whereas traditional pogo-style pins are produced in a semi-automated process at the rate of 200-600 per hour, the completely automated stamping process that produces the H-Pin can produce 200-600 a minute.

By automating the process, the spring-loaded probe pins can cost 30-50% less, depending on quantities. Reducing the number of components also increases reliability.

Available in various lengths and pitch sizes as low as .2mm, H-Pins are the brainchild of Plastronics. For more than 40 years, the company has used spring-loaded probe pins – including pogo-style pins – in the related test socket industry.

Test sockets utilize the same spring-loaded pins to provide a temporary connection with PCBs for the purposes of burn-in, humidity, failure analysis and other test requirements.

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To produce the pins, Plastronics embarked on a mission to re-design the pins and reinvent the manufacturing process so it was fully automated. The goal was to provide a highly compliant pin that provides high temperature, current and bandwidth performance at the price of a stamped contact.

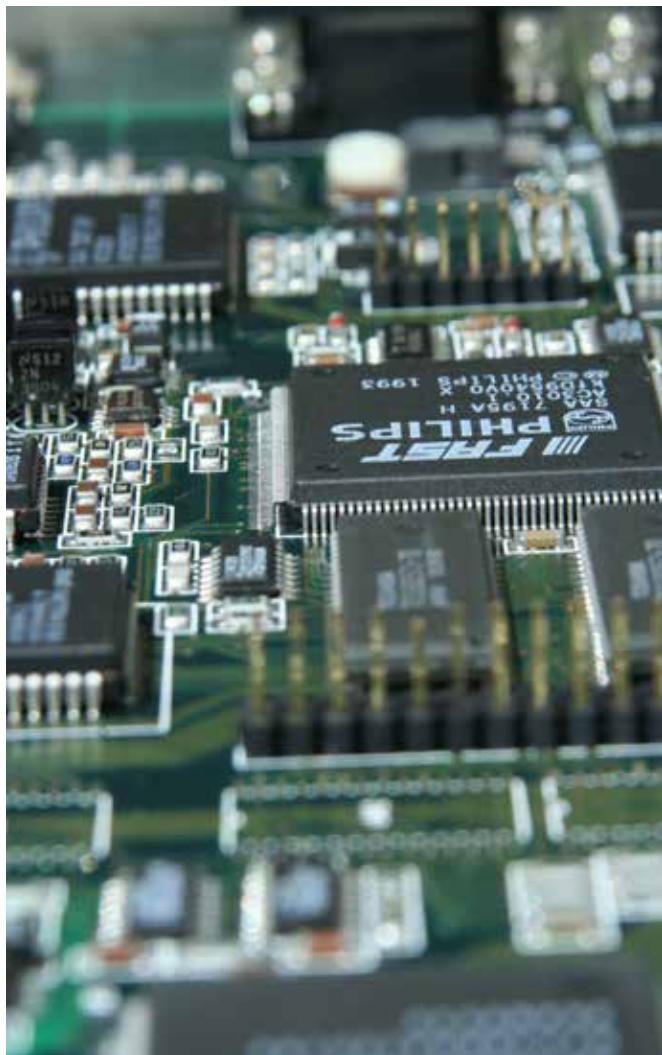
The company also inspects each stamped contact at multiple steps in the process to ensure the pins are identical. The spring winding process is controlled by wire diameter and spring OD is 100% inspected during spring winding. All components are auto inspected as they enter the assembly machine. Finally, all finished parts are auto-inspected before leaving the machine.

Higher production rates and lower costs allow Plastronics to stock much larger volumes for immediate delivery. This can be a disadvantage for low volume or custom orders, as H-pins are produced as standard part numbers.

With the market driving demand for increasingly miniaturized, fine-pitch pins in the hundreds of millions, the high-speed, fully automated production of this new breed of pin is sure to have major implications on cost, delivery and reliability.

For more information, contact Plastronics at 2601 Texas Drive, Irving, Texas 75062; by phone: (972) 258-2580, or email sales@plastronics.com.

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Taking the Pain Out of Regulatory Compliance

Properly designed continuous emission monitoring systems (CEMS) can simplify regulatory compliance while reducing costs

Petrochemical refineries are increasingly being called on to install continuous emission monitoring systems (CEMS) to collect, record and report data to comply with air emission standards outlined by the Environmental Protection Agency (EPA) as well as local and state air quality districts.

Spurring this requirement are stricter regulations, often stimulated by air quality districts, which expand the types and capacities of equipment, as well as the addition of chemical compounds, that must be monitored. In addition, facilities with decades-old monitoring systems are now facing the need to retrofit or replace obsolete components.

This is putting a spotlight on CEMS, as refineries eager to keep costs down wrestle with how to meet compliance requirements as inexpensively and efficiently as possible, while still protecting the facility against regulatory fines. Also at top-of-mind is keeping plant personnel on higher revenue generating priorities and off of maintenance and operational duties.

"CEMS are used for environmental compliance only. They do not make the refinery money," says Bill Deutschlander of Eichleay, a full service, multi-discipline facilities design and engineering firm for petrochemical and other industries. "So the least amount of money you can spend on the system and remain compliant is in the refinery's best interest."



As a member of the instrumentation and controls group, Deutschlander has decades of experience working with laboratory and inline process analyzers, including CEM systems.

The difficulty with that concept, says Deutschlander, is that a poorly designed CEM system with the least expensive components can cost much more in the long run in ongoing upkeep and maintenance.

"A lot of [CEMS] providers want to purchase the lowest-priced equipment to install in their system," adds Deutschlander. "That might get you a lower installed cost, but you want quality system components so you minimize the amount of maintenance required."

In addition, if the system fails to record data, even for short periods of time or is not properly validated every 24 hours, regulators can levy significant penalties against the facility that can range from \$50,000 for a

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CEMS Integration

Housed in shelters in close proximity to each piece of equipment monitored, CEM systems continuously transport samples of exhaust gases that have been conditioned to a rack of analyzers. Reporting software is also included, and the entire system is often tied into the refinery's network.

To accomplish this task, CEMS involve probes, analyzers, pumps, chillers and other components available on the open market. As such creating these types of systems is a matter of integrating a variety of products from different manufacturers.

Once integrated, by EPA rule, CEMS must be validated once every 24 hours to ensure the analyzer has not drifted off its calibrated accuracy by more than typically 10%. CEMS operate 24 hours a day, 365 days a year and must also have an uptime of 95% to stay in compliance and avoid fines.

For these reasons, ongoing maintenance is unavoidable for facilities that expect to remain in compliance.

Stricter Regulations Spur Installations

For one west coast refinery, new regulations necessitated the installation of CEM systems on four mid-sized process boilers previously monitored by more basic oxygen monitors. The new guidelines from the local air quality district addressed emissions of nitrogen oxide (NO_x) and carbon dioxide (CO_2) from boilers, steam generators, and process heaters.

"We used to have different type of measurements on these process heaters, but that was no longer acceptable to the Bay Area and we had to install a full-blown CEMS," says Ken Sullivan, an engineer for analyzers and instrumentation at the refinery.

According to Sullivan, the project was put out to bid and was ultimately awarded to Cemtek Environmental, a leading supplier of custom engineered CEMS.

Cemtek is a system integrator of extractive, dilution and mercury CEMS designed to monitor compound such as NO_x , CO_2 , oxygen, sulfur and others. The refinery was already familiar with Cemtek, having worked with the company on several past projects.

"They came in with the best proposal," says Sullivan. "In our experience, they really try and do the right thing for us. If you put a spec together and they have a better idea, they will point it out based on their past experience."

Sullivan adds that Cemtek was able to install and complete initial testing of the system prior to the deadline and within cost.

Reducing Maintenance Requirements

There is routine maintenance that has to be done on these systems. Many plants find they must assign additional man hours to take care of the equipment.

"If plant personnel have to spend more and more time on the CEMS, usually what that means is it's going to take them away from working on profit generating equipment," says Deutschlander. "So properly designed process analyzers will help them ultimately have a much higher return on the dollar by making the process more efficient."

Exacerbating the situation is the continuing exodus of experienced personnel to retirement, leaving a younger generation of engineers with limited training on existing systems.

"You're seeing more outsourcing now because refineries don't have enough personnel to do the maintenance," says Deutschlander.

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To address this, integrators like Cemtek provide field service maintenance services. These can range from yearly visits to tune-up the system prior to annual re-certification, quarterly visits to maintain the system on a more regular basis, or even on-site services with daily technician visits.

Technology will also play a key role in reducing maintenance requirements. Today's emission systems now deliver remote diagnostics that allow technicians to review how the system is operating and conduct preventative diagnostics through a web browser, removing the need for regular or unnecessary on-site visits.

"You can maintain more [process analyzer] systems with fewer personnel using remote diagnostics," explains Deutschlander. "The more information you

can view remotely will lower the total overall cost of maintenance."

For more information about Cemtek Environmental, call: (714) 437-7100.

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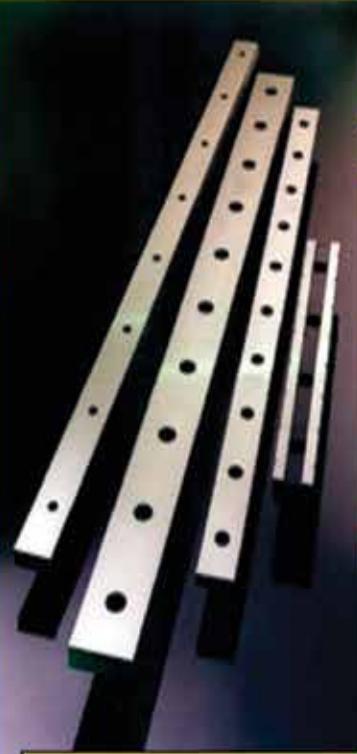
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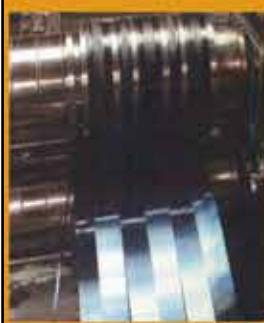
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