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## A Note From CPI

### MINExpo<sup>®</sup> was an unqualified success!

Dear Subscriber,

As I review my notes and recall the conversations and opportunities presented at our booth, I have to underscore all of it with how eager CPI is to help the mining industry achieve their goals of Precision, Efficiency, Reliability, and Safety. I want to thank everyone who stopped by; we appreciate your interest and we're excited to begin working with you. You made the show a big success for us, and we will do everything we can to meet your challenges.

What a turnout! Our world's first telescoping Smart Cylinder with built-in SL Series position sensing was received with great enthusiasm. And there was plenty of interest in the SL Sensors themselves. We'll talk about the cylinders and sensors later in this issue of SensAbility. We also showcased a broad array of limit and thermal switch solutions, which are ideally suited to mining applications, as they are submersible, virtually indestructible, and are easily configured with many different mounting and actuation options.



One of the greatest aspects of the MINExpo was that we were new kids on the block. The manufacturers and show attendees didn't know us, and we didn't know them. But we achieved immediate credibility, thanks to our long and successful history with our existing customers - the leading manufacturers in the construction and off-highway industries, and the exciting applications and products we have created working with them. From our perspective, mining equipment is a natural extension of the equipment we're involved with every day. And to the mining industry, reliability issues are even more acute. Because of the harsh environment hazards of high dust, dampness, water, dirt, and mud, safety and absolute reliability can only be achieved with extremely robust components.

Proven designs using totally sealed construction are what make CPI products extremely safe and reliable. At MINExpo, we were able to step up and offer the mining industry solutions that are going to make things run smoother, longer, and more productively.

What does all this mean as we go forward? Plenty. While much of what we've developed for the construction and off-highway equipment manufacturers is transferable to the mining industry, we expect the reverse to be true as well. The mining industry brings new challenges, and therefore new solutions and new ideas leading to exciting new products. In this scenario, everybody wins.

Sincerely,

**Mac Stuhler**  
**Vice President**  
**Control Products, Inc.**

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## Dust Contamination is Killing Components - What Can Be Done?

At the expo we learned of a situation where a linear potentiometer (internal cylinder position sensor) was used in a mining application. The potentiometer frequently and expensively failed in that application because of the incredible amount of environmental dust. The dust worked its way through the seals in the hydraulic cylinders, causing abrasion that destroyed the linear potentiometer installed inside the cylinder, resulting in the sensor's early demise and subsequent failure of this new automation.

We were pleased to reassure the manufacturer that the unique sensing element in CPI Smart Cylinders and SL Series Sensors has been successfully tested in contaminated



oil. Naturally, the SL Series sensor is completely sealed inside the cylinder for protection from external damage as well.

Want to know more about how CPI's SL Series Sensors can bring high Reliability to your most demanding applications? Call us at +1 973-887-9400; or send us an e-mail [sales@cpj-nj.com](mailto:sales@cpj-nj.com). Or [click here for complete SL Series](#) product information.

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## Automated Excavators Have a Real Need for Reliable Position Sensing



Automation is becoming a major goal for the mining industry for two reasons: Safety, because they want to be able to remove the operators from potentially dangerous positions; and Productivity, because of the increased operator confidence and performance in the field that advanced automated machinery delivers. And automation of hydraulic systems calls for accurate and reliable position sensing.

Here we see an ideal application for [SL Series sensors](#). At MINExpo we learned that there continues to be a problem with external cable reel type sensors not surviving in the severe mining environment. While broken cables on external sensor systems may be easy to replace on the fly (at 700 - 800 dollars each!), the use of a Smart Cylinder or SL Series sensor can eliminate malfunctions, breakdowns, downtime, and those high repair costs.

Give us a call or drop us an e-mail. Ask us how CPI's [Telescoping Smart Cylinders](#) can dramatically reduce downtime and maintenance costs while improving performance and productivity. Call us at: +1 973-887-9400; or e-mail [sales@cpj-nj.com](mailto:sales@cpj-nj.com)

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## Precise Movements are a Must in Long-Wall Mining

The mining industry is very concerned with knowing the exact position of the hydraulic cylinders used to support the roof and protect the miners and machinery at the working face.

A long face, or working section of coal, some 600 or more

feet in length, is being operated at one time. The miners and machinery at the working face are protected by self-advancing roof supports consisting of hydraulic jacks and metal plates. As the coal face is cut and removed, the hydraulic shields advance in the direction of the mining, allowing the unsupported ceiling in the mined area to subside as the miners work back towards the tunnel entrance. In this application it is absolutely critical that the roof supports advance at the precise distances. Failure is not an option.

To see how Precision, Efficiency, Reliability, and Safety all affect long-wall mining, check out [Coal Leader](#), Coal's National Newspaper, and the [University of Wollongong's](#) articles on long-wall mining.

When Precision and Safety are paramount, think CPI. Give us a call at +1 973-887-9400, or send us an e-mail [sales@cgi-nj.com](mailto:sales@cgi-nj.com)

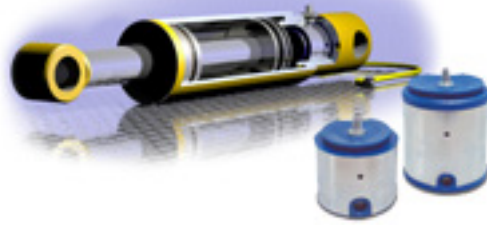
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## Automated Continuous Mining - Coming to a Mine near You

With continuous mining machinery, hydraulic cylinders are used to position everything from the cutters that rip coal, metal, nonmetal ores, rock, stone, or sand from the face; to the haulers which tip the material onto a conveyor system; to the conveyors that carry the material to the shuttle cars that transport it out of the mine, all in one continuous operation. Precise position sensing is critical for optimizing productivity and safety all along the way.

Today, automation is rapidly advancing into mining operations. Robotic continuous miners are now being developed that increase the number of operations that can be performed automatically.



Automated continuous mining could become the standard coal mining method in the not too distant future: "Intelligent" mining machines completely controlled by computers,

with sensors that pinpoint the exact positions of all moveable parts, and onboard control systems that run the equipment and collect data on the coal seam. A robotic miner would have its own navigation and guidance systems as well as internal diagnostics to spot problems, and video equipment to allow continuous monitoring of the mining operation by highly trained personnel located in a safe position either underground or on the surface.

As automated technology advances in mining equipment, so will the need for Precision, Efficiency, Reliability, and Safety. That's what CPI is all about. [Drop us a line](#), or visit us at [www.cpi-nj.com](http://www.cpi-nj.com). Or give us a call at +1 973-887-9400.

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## Thermal and Waterproof Switch Applications

At MINExpo there was a good amount of interest in CPI thermal and waterproof switch applications. The dump body detect switch application we told you about in the previous issue of SensAbility was met with great enthusiasm. Many attendees saw this as a much needed feature for their own systems.





Waterproof limit switch applications that we heard over and over were in the areas of operator presence, cylinder position for outriggers (where retract sensing as well as footing confirmation is needed), plus neutral sensing and various other shifter linkage situations.

For more information on CPI's [Thermal Switches](#), [click here](#). Or to learn about our [Waterproof Switches](#) [click here](#). Also, [see our note below](#) to get a free copy of CPI's Thermal Switch Catalog on CD ROM.

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## MINExpo Attendees - Look for CPI's Welcome Package



CPI would like to thank and welcome all the people who visited us at MINExpo 2004. We are sending out a "Welcome Package" to each of you that contains comprehensive product information and literature plus a sample of our waterproof E-Series limit switches, which are wonderful and unique problem solvers for harsh applications. We've also included a subscription sign-up card that you can pass along to your friends who might be interested in receiving SensAbility.

If you didn't see us at the show but would like a Welcome Package, [please click here](#). Mention the MINExpo 2005 Welcome Package, and we'll send one right off to you.

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## CPI's Complete Thermal Switch Catalog Available on CD-ROM

Control Products, Inc. offers thermal switch solutions for setpoints ranging from 0 to 1,850°F, and we've fully documented all of them on CD-ROM. Complete with specifications, drawings, and application information, the CPI Thermal Switch CD-ROM Catalog enables designers to quickly resolve temperature control problems with a vast array of mounting, probe, and temperature options. Plus, with links to the CPI website and online ordering, samples can be requested as quick as a click. Best of all, the CD is free.



Facilitate your design process with the CPI Thermal Switch CD-ROM Catalog at your fingertips. To get your free copy contact Control Products, Inc. 280 Ridgedale Avenue, East Hanover, NJ 07936; or call +1 973-887-9400; or e-mail [sales@cpj-nj.com](mailto:sales@cpj-nj.com).

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## You're Invited - Come See Us at CONEXPO-CON/AGG 2005



March 15-19, 2005  
Las Vegas, USA

CONEXPO-CON/AGG 2005 will be the world's largest international gathering place in 2005 for the construction and construction materials industries, showcasing the latest equipment, services, and technologies.

With 2,300 exhibitors covering more than 1.85 million square feet of exhibit space, CONEXPO-CON/AGG 2005 will be the one source for more than

100,000 industry professionals from over 120 countries. This great show will be co-located with IFPE 2005 - the International Exposition for Power Transmission.

We'll be there, in Booth S15013, South Hall. We're looking forward to seeing many of our customers as well as making some new friends. Please stop by and say hello.

The show will be held March 15 - 19, 2005 at the Las Vegas Convention Center in Las Vegas, Nevada, USA. Here is the link to the expo website, where you can learn more and register: <http://www.conexpoconagg.com>

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#### What Do You Think?

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