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[Subscribe](#) | [Unsubscribe](#)**IN THIS ISSUE**[Spring is in the air, and so is Automation](#)[Next Generation Tactical Defense Truck Utilizes CPI's SL Sensor for Automated Load Handling](#)[Backhoe with Automated Functions Delivers Precise Control](#)[New SL720 Sensor Update](#)[CPI's Smart Cylinders – Fully Assembled and Ready to Use](#)[E-Series Limit Switch Gets a Spotlight for Dump Body Down Applications](#)[CPI's Waterproof and Thermal Switch Catalog on CD-ROM](#)[Subscribe](#) | [Unsubscribe](#)**A Note From CPI**

## Spring is in the air, and so is Automation.

Dear Subscriber,

As spring unfolds in northern New Jersey and the budding of trees and chirping of the peepers herald new life, I can't help but draw a parallel to

what's happening with the U.S. economy as well as business here at CPI. Things are coming back to life. In fact, business for us has increased dramatically, and we've just completed our best first quarter in quite some time. A record-setter, actually. If this is an indication of the year to come, we're in for plenty of excitement.



In response to the increased business, we've ramped up our production staff by 25%. We've also added another full-time design engineer to keep us ahead of the game (we'll introduce him to you in our next issue). So as the year progresses, CPI is prepared to continue giving the quick, reliable, and personal customer service we're known for.

Here at the office, we're just now cooling down from CONEXPO-CON/AGG 2005, which was a tremendous success. More than 124,220 industry professionals from around the world were there during the show's five-day run. We saw the latest equipment, product innovations, and technological advances of the construction,

construction materials, and power transmission industries. The 2005 show matched the all-time record attendance number set in 1999, and set a new record for international attendance. CONEXPO-CON/AGG 2005 was also the largest in the show's history in terms of exhibit space.

### **Automation was the Show's Hot Topic!**

The topic that absolutely defined CONEXPO-CON/AGG 2005 for us was Automation. We had a tremendous turnout at the booth and spoke with representatives from over 150 equipment



manufacturers. About 90% of our contact conversations centered on the excitement and potential of the SL Series sensor. Numerous major manufacturers are keenly interested in automating their hydraulic equipment, and they see CPI's SL Sensor as the enabling technology they need to turn their goals into realities.

Since the SL Series sensor solves so many of the problems associated with traditional rod-type sensors, we heard engineers, product managers, and high-level executives from machine manufacturing companies refer to the SL sensor as "the missing link," "the silver bullet," "just what we're looking for," and even "the holy grail." We presented our products to representatives from Caterpillar, John Deere, Ingersoll Rand, JCB, CNH, and Terex, to name just a few.

All this interest in the SL Series sensor confirmed what we've been saying in SensAbility all along: The age of Automation is here.

Automation is now a reality. And CPI's SL Series sensor will play a key role in this new direction for heavy equipment in the construction industry.

Sincerely,

Mac Stuhler  
Vice President  
Control Products, Inc.

[\(back to top\)](#)

## Feature Articles

### Next Generation Tactical Defense Truck Utilizes CPI's SL Sensor for Automated Load Handling



Oshkosh Truck Corporation, a leading manufacturer of trucks and truck bodies, has developed the next generation of its Heavy Expanded Mobility Tactical Truck (HEMTT) for the U.S. Army. Known as the HEMTT A3, this third-generation design features numerous advanced technologies such as hybrid-electric drive, an enhanced load handling system utilizing CPI's SL Sensor, and independent suspension to improve performance and enhance the U.S. Army's deployability and mobility.

Designed to be the most advanced, most effective tactical defense truck in the world, the HEMTT A3 is expected to be a vital logistical element as the U.S. Army transforms into modular brigades. The HEMTT A3 is the first tactical truck capable of directly unloading cargo from a C-130 aircraft without the assistance of material handling equipment.





This capability will produce efficiencies in the supply chain never before experienced in a joint operating environment. Air Force cargo planes will be able to deliver supplies directly onto Army transport units which then deliver

to remote locations. Logistics support battalions will be able to keep pace with combat troops.

A critical emphasis during development of this revolutionary new tactical truck was improving protection for the soldier. An integral armored cab can be field installed in less than eight hours to allow commanders to respond to changing threat levels quickly.

The automated load handling system uses a set of hooks that automatically set the container into place on the truck without the driver having to leave the security of the cab. From inside the cab the driver can also offload the container from the truck. This new load handling system is ideal for a highly dangerous combat environment where the goal is to quickly and continually keep the troops supplied and ensure that U.S. troops get there first in every situation.



[Read more about the HEMTT A3](#)



[\(back to top\)](#)

## Backhoe with Automated Functions Delivers Precise Control



John Deere recently announced the introduction of the 410H Backhoe, the construction industry's first machine with Total Machine Control™ (TMC). TMC integrates control of every system in the machine, from engine to transmission

and hydraulic functions to brakes, according to Bob Tyler, product marketing manager, John Deere Construction & Forestry Company.

"As a result of the TMC technology, all of the systems for the 410H respond automatically to the speed and feel preferences set by the operator," he said. "This type of precise control of the machine's functions allows this backhoe to deliver the best possible productivity and uptime, while minimizing operating costs."

The 410H, the first backhoe on the market to feature this technology, delivers high productivity through faster cycle times. A key feature that boosts cycle times is the three-speed backhoe hydraulics, which enables the operator to choose between three dig speeds. When the machine is started up, it will dig at exactly the same speed as a current Deere 410G will dig, which is effective in general trenching and other similar tasks. Select the fast mode, and the 410H backhoe with TMC will dig 30 percent faster than the current 410G; select slow mode, and the machine will dig 20 percent slower than current production.

"The fast mode obviously results in faster cycle times when bailing dirt and other simple tasks," Tyler said. "When doing careful work, such as craning loads and other similar tasks on a crowded job site, or when training a new operator, the slow mode is very useful for maintaining control and



balance."

The 410H also provides some automated features not generally found on a backhoe. One of these features, return-to-carry, enables the operator to simply push the lever forward and let go of the joystick after dumping a load; the boom will automatically return to a position that's just above the ground, ready for another cycle.

Another automated feature offered on the 410H is boom height kick-out, which allows the operator to set the loader boom height to fit working conditions. "For example, if a job requires the loader to go in and out of a specific entry, the boom height can be pre-set so that there's no danger of the boom accidentally making contact with the top of the door," Tyler said.

Auto-idle, an automated feature that enhances fuel efficiency, also is provided on the 410H. If the operator releases the backhoe controls for more than four seconds, the engine automatically reverts to idle, which saves fuel and reduces noise. In addition, the system ensures that if a hose is accidentally damaged, the boom stays in place. Hose burst protection helps further minimize operating costs.

Serviceability is enhanced by improved in-house diagnostics, according to Tyler. "The 410H has a lot more electronic capability than past machines, which includes more electronic and hydraulic sensors," he said. "Because of those sensors, the system captures a wealth of diagnostic data and stores it for technicians to access later, allowing them to prevent potential service issues on the machine." Additionally, backhoe valves are easier to reach for servicing, since they're located on the backhoe boom rather than buried under the floor of the cab.

John Deere will produce some 410H machines for release in the fall of 2005.

"This machine is the only backhoe on the market that offers this many automated features, not to mention all of

the other capabilities that make it the most versatile and productive machine in its class," Tyler said. "The 410H truly is the next generation in backhoe technology."

[Check out the full 410H story here.](#)

CPI sees this as an exciting indication of things to come, and we'll soon be seeing more and more manufacturers incorporating advanced control capabilities into their machines. Got hydraulic automation on your drawing board? Talk to us, we'll make it happen. Call us at: +1 973-887-9400; or e-mail [sales@cpi-nj.com](mailto:sales@cpi-nj.com)

[\(back to top\)](#)

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## New SL720 Sensor Update



The eagerly anticipated new SL720 sensor with its lower cost, longer stroke length, and more robust construction is slated for release this coming July. At that time we'll be taking orders and shipping product.

If you're serious about achieving reliable position sensing in a hydraulic cylinder, give us a call. You may have heard about (or even tried) other technologies, but none of them work as well as CPI's SL Series Sensors or fully assembled Smart Cylinders. Other technologies available today are much harder to implement, they're much more expensive to implement, they're not as robust, and they absolutely cannot be used with telescoping cylinders. Until the introduction of Control Products' SL Series, internal position sensing in telescoping cylinders was impossible.

The unique design of the new SL720 sensor establishes accurate position in hydraulic cylinders with up to a 72"

extension. Since one sensor works for any stroke length (within the maximum range), there is no need to inventory multiple models to accommodate different cylinders.

The new SL720 at a glance:

- Sensor resides completely inside of cylinder
- No core drilling of rod required
- Non-contacting Linear Variable Inductive Transformer sensor technology
- No end-of-stroke dead zone
- No lower limit to cylinder bore size
- Virtually immune to shock and vibration, regardless of stroke
- One part can be used for any stroke length — same low cost
- Hammer-proof high pressure electrical connection
- Can be used in telescoping cylinders
- Easily integrated into high-volume hydraulic cylinder production

Reliable hydraulic position sensing can be a reality for your equipment. We'll show you how.

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).

[\(back to top\)](#)

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**CPI's Smart Cylinders – Fully Assembled and Ready to Use**

Don't want to assemble the cylinder sensor yourself? No problem. CPI offers a full line of completely assembled Smart Cylinders.



Smart Cylinders are the world's only telescoping cylinders complete with a built-in SL position sensor. Just install them on your equipment as you would a regular hydraulic cylinder. It's that simple. Smart Cylinders are ideal for mobile equipment and harsh-environment applications — the SL sensor securely housed within a Smart Cylinder is virtually indestructible, withstanding up to 50g shock and 5g vibration.

Fully assembled Smart Cylinders are available from CPI in 1" to 30" bores, with low, medium, and high pressure seals and up to 72" maximum stroke. Complete with shielded cables and signal conditioning, these are the cylinders you need for precise control when the going gets tough.

Read more about the SL Series here: [www.cpi-nj.com](http://www.cpi-nj.com)

Let CPI do it all, so you can take advantage of SL technology in this easy, one-piece Smart solution.

Contact Control Products, Inc. 280 Ridgedale Avenue, East Hanover, NJ 07936; or call +1 973-887-9400; or e-mail [sales@cpi-nj.com](mailto:sales@cpi-nj.com).

[\(back to top\)](#)

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## **E-Series Limit Switch Gets a Spotlight for Dump Body Down Applications**



CPI's E-Series limit switch E1092-540 has found a new starring role as a dump body down detect sensor. This little switch is a big problem-solver. CONEXPO-CON/AGG 2005 was a perfect showcase for E-Series limit switches, as they are completely sealed, totally submersible, industrial grade switches that offer application-specific opportunities for numerous markets.

We reviewed the Dump Body Down application in Volume 1 Number 6 of *SensAbility*. [You can read the complete issue here](#). Note: this is an Adobe® Acrobat® file and requires Acrobat or Acrobat Reader.



Want to prevent serious accidents and costly damage to property? Learn more about CPI's E1092-540 limit switch and our other Waterproof and Thermal switches here: [www.cpi-nj.com](http://www.cpi-nj.com). Or call us at +1 973-887-9400; or e-mail [sales@cpi-nj.com](mailto:sales@cpi-nj.com).

[\(back to top\)](#)

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## CPI's Waterproof and Thermal Switch Catalog on CD-ROM

If you stopped by our booth at CONEXPO-CON/AGG 2005 you probably picked up a copy of CPI's Waterproof and Thermal Switch Catalog on CD-ROM. But if you don't have one, you can get it now at no charge.



This handy, quick-reference CD-

ROM catalog is replete with specifications, drawings, and application information to make it easier than ever to find the CPI waterproof or thermal switch to meet your needs. We've also included information on SL Series Sensors. The CD includes links to the CPI website and online ordering, so samples can be requested as quick as a click.

Facilitate your design process and put Precision, Efficiency, Reliability, and Safety at your fingertips with the CPI Waterproof and Thermal Switch CD-ROM Catalog.

To get your free copy contact:

Control Products, Inc.

280 Ridgedale Avenue

East Hanover, NJ 07936

Or call 973-887-9400; or e-mail [sales@cpi-nj.com](mailto:sales@cpi-nj.com).

[\(back to top\)](#)

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[\(back to top\)](#)

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[\(back to top\)](#)