



Chicago
Pneumatic

February 2010

**CRANKED
UP CONVERSATION**

**WHAT'S THE
WORST
THAT CAN HAPPEN?**

The answer is unacceptable. Wheel Torque Solutions is your first step to putting a safe fleet on the street.

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INSIDE THE BAY

Far too often wheel-offs cause accidents that take lives. But even more often, wheel-offs happen on lonely highways, back roads, or in deserted neighborhoods – which is good because it avoids catastrophic accidents, but at the same time it hides the enormity of the problem from public view.

And it's not just in the U.S. This is an international issue. In fact, in Quebec they began demanding mandatory training for technicians in wheel fastening and handing out \$50,000 fines for wheel-offs. Yet, in the States, there are no government regulations or fines for faulty maintenance practices that lead to wheel-offs, which only permeates the atmosphere of secrecy around the subject.

Chicago Pneumatic is part of an industry partnership of four companies, Alcoa, Chicago Pneumatic, ITW CIP and B&D, called Wheel Torque Solutions, that came together to solve the serious problem of wheel-offs in the heavy trucking industry.

It's long been believed in the industry that there wasn't a fix for this issue. That wheel-offs were inevitable due to the number of trucks on the road and the frequency of the maintenance to their wheels. Well, we're happy to state today that Wheel Torque Solutions brings together the optimum nut, bolt, wheels, tools and processes for increasing torque retention and significantly reducing the potential for costly and dangerous wheel-off incidents.

And, while wheel-offs will likely never be completely eliminated, if maintenance managers utilize the tools and equipment we recommend in conjunction with the process we unveiled earlier this month at TMC, a process that we developed and tested with a leading environmental services company, you can sleep easy at night, knowing that you've greatly diminished the odds of experiencing a wheel-off in your fleet.

So, how did we do it? We cover the process in-depth in this issue of *Cranked Up Conversation*. And, if you want even more information, I encourage you to call Chip Todd, Blue Tork Sales Manager for Chicago Pneumatic, at 803.817.7361.

Thanks for reading!

Danielle Stevens
Marketing Communication Manager
Chicago Pneumatic

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FOUR COMPANIES UNITE TO REVOLUTIONIZE FLEET WHEEL CHANGING PROCESS

Alcoa Wheels, B&D Cold Heading, Chicago Pneumatic and ITW CIP unveiled at TMC an innovative, highly researched and developed wheel installation process, called Wheel Torque Solutions, that significantly reduces costly and dangerous wheel-off incidents. This group of companies, through the research and development conducted with a large environmental services fleet in North America, have accomplished what others in the industry said couldn't be done.

Wheel Torque Solutions identifies and addresses all points of failure in the traditional wheel installation process through a clearly defined procedure combined with the careful selection of tools and components. This combination significantly reduces the potential for human error that can result in costly and dangerous wheel-off incidents.

This alliance brings together the optimum nut, bolt, wheels, tools and processes for increasing torque retention. The components and wheel installation processes were researched and developed with a large environmental services fleet in North America. The research proved that increasing torque retention not only improves safety, but also provides maintenance cost savings over the life of a wheel. This innovative process relies on the unique product attributes of the companies involved, combined with detailed wheel end maintenance and fastening processes.

The key to strengthening the clamp force is maximizing the preload and grip length without comprising the structural integrity of the components. Wheel Torque Solutions accomplishes this through the use of industry leading components that have been tested to achieve maximum clamp force at torques greater than 600 ft-lbs.

Alcoa's forged aluminum wheels allow for increased grip length in the joint over steel wheels, providing additional stretch or preload that helps keep the wheels tight. Grip length is also increased through the combination of ITW CIP PAC-SLEEVE™ laminated lock nuts, which are designed to internally deflect as torque is applied below and through the bolt stretch or elastic range, adding to the bolt's capability to maintain preload. The increased bolt stretch at 600+ ft-lbs. of torque is made possible through the use of B&D wheel bolts that are made with high quality steel through a proprietary manufacturing process for added strength and feature rolled threads with serrated press.

To solve the issue of proper drum and wheel seating and to eliminate damage to bolts during the installation process, Alcoa designed state-of-the-art sleeves that seat the brake drum against the hub during installation and align the wheels for easy installation of the PAC-SLEEVE™ nuts.

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Consistent, accurate torque is critical to the wheel fastening process as well. Chicago Pneumatic's BlueTork electric nut runner provides accurate fastener tightening to specified torque settings. The tool includes reporting functionality that provides confirmation of the consistent torque application.

While the components and tools are key, proper wheel end maintenance remains a critical factor in reducing wheel-off incidents. The components must be cleaned and installed, all the equipment must be maintained, and training of technicians and any external road service personnel is extremely important.

Fleets which utilize the Wheel Torque Solutions components, equipment and processes will have a safer fleet of vehicles and experience prolonged wheel component use, with bolt, nut and wheel seeing extended life.

Only through a true feat of innovation and persistence were these companies able to come together for the benefit of the entire heavy duty fleet market and the safety of the general public. The group's goal from the beginning was to provide fleets with the tools they need to put a safe and efficient fleet on the street, while saving on maintenance costs over the life of the wheel.

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WHEEL TORQUE SOLUTIONS – COMPONENTS AND EQUIPMENT

Wheel Torque Solutions eases the ordering of wheel components, with a single source of customer service for ordering the parts and tools.



Alcoa forged aluminum wheels allow for increased “grip length” in the joint, providing additional stretch or preload that helps keep the wheels tight. In addition, Alcoa’s revolutionary wheel installation sleeves that hold the brake drum against the hub during installation to ensure proper seating, protect the wheel studs from damage while installing the wheels, and align the wheels for easy installation of the PAC-SLEEVE™ nuts. An additional benefit to using aluminum wheels is the elimination of issues that may be caused by painted steel wheels that hamper the ability to maintain tightness. Steel wheels properly used will not be an issue.



B&D Cold Heading wheel bolts, formed through a proprietary process utilizing high quality steel, have developed the possibility of higher torque through increased strength. The increased strength levels are also a benefit through increased service life.



Chicago Pneumatic BlueTork nut runners, impact wrenches, sanders and polishers are critical to the Wheel Torque Solutions process. BlueTork air and electric nut runners provide accurate fastener tightening to specified torque settings, with the electric version providing data collection on each tightening. Chicago Pneumatic impact wrenches allow for quick and reliable wheel removal and wheel installation sleeve fitting. Chicago Pneumatic high speed sanders and polishers are essential to the wheel and bolt maintenance process.



ITW CIP PAC-SLEEVE™ laminated lock nuts are designed to internally deflect as torque is applied below and through the bolt stretch or elastic range, adding to the joint’s capability to maintain preload.

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CRANKED UP INTERVIEW

Cranked Up Conversation stole five minutes of time with Chip Todd, BlueTork Sales Manager, Chicago Pneumatic, in between demos during the TMC Show earlier this month in Tampa. Chip was happy to answer our questions about Wheel Torque Solutions.

What is Wheel Torque Solutions?

Wheel Torque Solutions brings together the optimum nut, bolt, wheels, tools and processes for increasing torque retention, which is the key to reducing costly and dangerous wheel-off incidents. The goals of this revolutionary solution are to increase safety by reducing the potential for wheel-offs through increased torque retention and saving on maintenance costs over the life of the wheel.

Wheel Torque Solutions identifies and addresses all points of failure in the traditional wheel installation process through a clearly defined installation process and the use of tools and components that significantly reduce the potential for human error that can result in costly and dangerous wheel-off incidents. Wheel Torque Solutions provides increased torque retention through a proven wheel installation process that has been tested with a large environmental services fleet in North America.

What makes Wheel Torque Solutions revolutionary?

Well, there were those in the industry that said it couldn't be done. We, four leading fleet truck product suppliers, Alcoa Wheels, B&D Cold Heading, Chicago Pneumatic and ITW CIP, did it, and that makes us revolutionary.

If a fleet switches and uses these tools and components, will their wheels stay tight?

This solution offers fleets a process that has proven to increase safety, but there is more to keeping the wheel joint tight than using these tools and components. Proper wheel end maintenance remains a key factor. The components must be properly cleaned and installed, all the equipment must be properly maintained and proper training of technicians and any external road service personnel is critical to the process.

Will using these tools and procedures eliminate the need to retorque?

During our research and development, the Wheel Torque Solutions we developed eliminated the need to retorque wheels. However, each fleet must determine what works within their operation. TMC RP237, which shows fleets how to determine their retorque process, should be followed.

How is Wheel Torque Solutions being received at the show?

It's being received great. We've booked a lot of meetings for the next few months so folks can take a closer look at the tools, components and process, and we've even taken orders for BlueTork on the spot this week. Everyone knows wheel-offs are the industry's dark secret, so fleet managers are naturally excited about real, proven solutions to the problem.

Chip Todd seen here holding the pneumatic CP7600 BlueTork nutrunner with Nils Steika, Danielle Stevens and Brian Dove (left to right) at the TMC Show.



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CRANKED UP CONTEST: FEBRUARY

READ CRANKED UP - WIN FREE STUFF

Tell us the name of the tool Rich Evans is holding on his new trailer design (seen here) and we'll draw one winner from the correct entries. The winner receives the tool Rich is holding. It's that easy!



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