

HYTORC president Junkers discusses revolutionary Z-Gun tool

HYTORC Industrial Bolting Systems

HYTORC Industrial Bolting Systems makes industrial bolting safer and simpler. With more than 40 years of bolting experience, HYTORC is one of the most trusted names in the industry.

BIC Magazine recently sat down with Eric Junkers, president of HYTORC, to discuss the company's new Z-Gun, a revolutionary bolting tool that helps customers avoid inadvertent finger pinching, joint leakage and failure, and lessens the time it takes to tighten or loosen industrial equipment.

BIC: What is HYTORC's overall mission?

Junkers: Our main goal is to make industrial bolting as safe and simple as possible. We do this through safety and operational training programs, and through product innovations that make the tools themselves safer and faster as well as more accurate and intuitive. We are the only bolting tool manufacturer with 45 years of experience solely focused on industrial bolting technology. We have no other products so we have to find better ways for our customers to improve safety and job quality, and meet maintenance or production schedules. Our business is all about customer satisfaction and we aim for perfection in this field.

BIC: You've been advertising the world premiere of a new tool called the Z-Gun on the back cover of BIC Magazine. What is this tool all about?

Junkers: The Z-Gun is the most revolutionary bolting tool ever developed; it is the world's first precision impact wrench. Our first concern in developing this tool was safety. Something had to be done to avoid finger pinching with hydraulic, pneumatic and electric torque tools. It is an epidemic in the industry. Companies want faster tools and yet faster torque tools increase the danger of getting fingers smashed with a fast rotating reaction arm.

Many will dismiss this as an operator's error, but we see it as something that must change in the industry. As a result, much of our research and development has been focused on the mission of eliminating the reaction arm on torque tools. We found different ways but not necessarily economical ones — until our invention of the Z-Gun. This is why we praise the Z-Gun as “the only bolting tool you'll ever need!”

BIC: As the inventor of this product, what was your inspiration?

Junkers: The Z-Gun was developed to fill a gap in our industry. I am not an engineer, but I know the one thing that stands between accurate torque and accurate bolt load is friction. Bolt load precision cannot be achieved as long as torque tools have the unknown frictions that occur when the arm of the tool reacts against a neighboring stationary object. It also cannot be achieved with tensioners as long as they over-pull the bolt to allow for unknown bolt relaxation. We had to think outside the box to address the short fall of both torque and tension.

BIC: You claim the Z-Gun can eliminate thread and surface galling of fasteners. How is this achieved?

Junkers: Many people in our industry are already using washers under their hex nuts to combat surface galling. The combination of thread and surface galling is one of the main causes of excessive cost and delays on bolting jobs. Our approach simply uses the washer to eliminate the reaction arm, eliminating the damaging pressure that is normally concentrated on one side of the bolt.

Another major contributor to thread damage is the corrosion that forms over time, especially in extreme temperatures or climates. Our impact-assisted Z-Gun pulverizes the corrosion before applying full loosening torque to completely eliminate the major sources of thread galling. Once the inner thread corrosion has been broken up, the Z-Gun switches from impact to torque mode to get the nut loose and then switches back to impacting to zip off the nut at 4,700 rpm (revolutions per minute). Now you have a tool that does away with the two major contributors to bolt damage and delays, with increased speed and portability.

BIC: What are the advantages of using this tool over a standard impact wrench?

Junkers: In many cases, the force that is required to loosen a nut is as much as 300-percent more than what was used to tighten it. For this, the continuous power that can be achieved with the Z-Gun allows for much higher values than the intermittent power coming out of an impact wrench.

Additionally, from a safety point of view, we have seen many new directives that limit an operator's daily exposure to the noise and vibration that most impact wrenches emit. The European Directive 2006/42/EC puts a daily exposure action value of 2.5 meters per square seconds for hand/arm vibration. The Z-Gun has one-

third of that daily exposure action value, which would normally be impossible to achieve with an impacting tool capable of up to 10,000 foot-pounds. In addition, impact wrenches are not torque accurate, which is why we had to reinvent the power torque wrench.

BIC: All nonimpacting torque wrenches need to abut against a stationary object to stop the tool from turning. How does the Z-Gun work without a reaction arm?

Junkers: As I mentioned, placing a hardened washer underneath the nut avoids surface galling. It is recommended by ASME and required by DIN, the German Institute for Standardization, and EN (European Standards) to also obtain a more accurate translation from torque to bolt load. By using our patented reaction washer, we are able to completely eliminate the reaction arm and its safety concerns. This idea stemmed from our overall goal of developing a safer and more user-friendly industrial torque tool.

BIC: You advertise the Z-Gun as fool-proof. Can you elaborate on that?

Junkers: Our goal was to make this tool as intuitive as possible. If an operator who has never used it before can pick it up and figure out how to use it without instruction, we can increase safety and reduce job time. In our industry, the most common tool has always been the impact wrench, which almost anyone knows how to use.

When we first introduced the hydraulic torque wrench with a reaction arm, people couldn't figure out how to get the tool running without a quick demonstration. Still today, we provide free user trainings throughout the world for our hydraulic torque wrench customers — something nobody would want with impact guns. This will change with the Z-Gun and so will inadvertent finger pinching, joint leakage and failure, and the time it takes to tighten or loosen industrial equipment.

BIC: Where are HYTORC tools used?

Junkers: Our tools are used all over the world

wherever there are bolts and nuts that require accurate bolt load. We work with all heavy industries including oil and gas, power generation, petrochemical, mining, military and more. Recently, we received a lot of publicity when One World Trade Center in New York City was designated as the tallest building in the Western Hemisphere. Our tools were used to assemble the 408-foot spire that gives the building its tremendous height. We have also worked with NASA on the space shuttle program and our tools were used to cap the oil leak in the Gulf of Mexico in 2010. We are always excited to work on new projects and our engineering team enjoys the challenge that comes with them.



Eric Junkers, president, HYTORC.

BIC: What is next for HYTORC?

Junkers: We will continue to develop new and innovative products while improving the ways in which we can serve our customers. Over the last four decades, we have invented every single major improvement in our field and we intend to continue that pursuit. We love to receive feedback about our products so we can develop the tools our customers dream about. As the signature on all of our company emails says: “Our Goal: To keep you smiling!” HYTORC — and our 250 associates throughout the world — lives by this slogan 24/7.

Eric Junkers can be reached at ejunkers@hytorc.com or (201) 512-9500. For more information about HYTORC products or services, email info@hytorc.com or call (800) FOR-HYTORC [367-4986]. ●



HYTORC's Z-Gun.