



Steven Sherman

Steven Sherman is Vice President of Industrial Rivet and Fastener Company, the manufacturer of RivetKing branded Permanent Mechanical Fasteners. Steven joined the company, which was founded by his great-grandfather, in 1998 as Production Control Supervisor after attending UC-Santa Barbara and Santa Barbara City College. With his multi-faceted experience that ranges from cold forming through to application engineering, Steven focuses on helping bridge the gap between suppliers and their customers. He regularly hosts seminars and training sessions to broaden the industry's knowledge and demonstrate the benefits and effective use of riveting technology.

RIVETNUTS: PULL AND PRAY GIVES WAY TO A BETTER SOLUTION

When you need to add strength to thin materials, using rivetnuts is an excellent solution. That's because the additional threads of a rivetnut give fasteners a more secure joint.

When not installed correctly, however, rivetnuts can lead to increasing costs in tool repairs and production stoppages, as well as warranty claims due to stripped threads or rivetnuts that are not set completely.

While traditional installation methods have some drawbacks, recent technology advancements can help your customers ensure they are using rivetnuts properly.

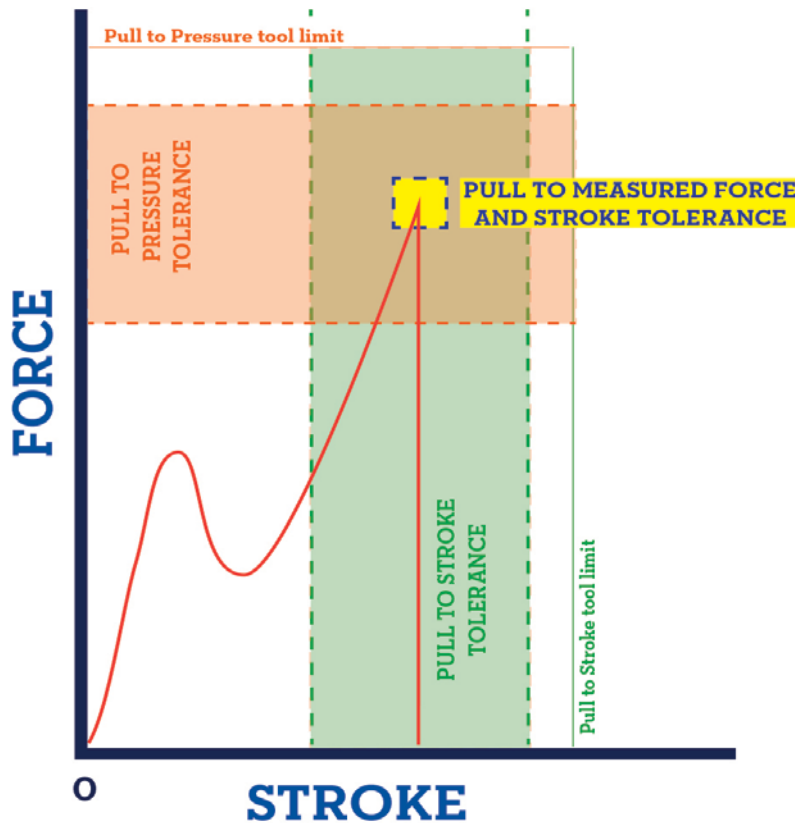
Rivetnut Installation Methodologies – What You Need to Know

▫ **Spin-Spin** - The oldest methodology, spin-spin, uses rotational power (torque) to deform and set the rivetnut. While this technology is generally effective, it does have some shortcomings. To start, it's slow since the torque applied follows the path of the thread helix and is dependent on supplied air pressure. It also leads to high mandrel wear because of the friction created by the installation

torque. Plus, the setting stroke of spin-spin tools is extremely sensitive to the lubrication on the rivetnut itself, and the air pressure supplied to the tool.

▫ **Spin-Pull** - The key difference in spin-pull tools is that pull force is applied without using any torque to deform the nut. The first trigger spins on the rivetnut, and the second applies a dynamic load and pulls to deform and set it. Spin-pull tools are faster and more reliable than spin-spin technology, making them the best choice for high-volume production environments.





▫ **Pneudraulic Spin-Pull Tools** - Pneudraulic spin-pull tools are available in two basic variations based on the way the tool is stopped in the pull direction. **Spin-Pull to Stroke** tools are positively stopped by placing a limit on the backward stroke. In this case, the tool is always pulling at full pressure. The tool works best when it is set for a particular rivetnut size and metal thickness, which requires calipers and trained personnel to define and enforce the setup. With a **Spin-Pull to Pressure** tool, there is no positive stop and the backward stroke is limiting the air pressure via a valve on the tool. Since there is a marginal correlation between the air pressure and the dynamic load, a reduction in air pressure equals a decrease in applied force. That means the tool is essentially starved of air pressure, and hopefully comes to a complete set just before the air pressure is consumed. While this works well with a variety of rivetnuts and metal thicknesses – it's not precise

because variables such as air pressure, oil level, hydraulic seal conditions and operator experience can all impact the outcome.

Taking Spin-Pull Technology to the Next Level

The newest method of riveting, the Spin-Pull to Measured Force and Measured Stroke, uses an electric drive motor and 18-volt battery. By removing the pneumatic line, the pull force can be regulated electronically. Sensors powered by the battery measure and control the process precisely. The actual stroke is measured by a linear light sensor and the actual force is measured within 1% of accuracy by a load cell.

In addition to this, force and distance limits can be programmed into the tool by the manufacturing engineer and a memory card can be added to store the force and stroke of each rivetnut installed for future use. If a WiFi card is also added, the pass/fail data can be sent to MIS systems warranty tracking. This electronic solution eliminates the uncertainties of pneudraulic methods.

The result is a robust, repeatable process that delivers greater accuracy for maximizing efficiency as well as minimizing downtime, rejections and claims.

For more information contact regarding the contact of this article, contact the author at:

Industrial Rivet & Fastener Co.

200 Paris Avenue, Northvale, NJ 07647

Tel: 1-800-BUY-RIVET (1-800-289-7483)

Fax: 201-750-1050

Email: info@rivet.com

Web: www.rivet.com 