



## WHITE PAPER

### “Optimizing your processes with the correct power tool for non-critical fastening”

Identifying and finding the best torque tooling solution for your individual needs is paramount to success in your assembly process. Not all applications require the complexity and investment costs associated with DC tooling for critical fastening. The key in your facility is to obtain knowledge of your assembly processes, problems, ergonomic and safety needs. Repeatability, in process monitoring, durability in harsh or unique environments are just some of the factors that can become part of the equation in fitting your manufacturing team with the best possible tools every day.

In evaluating power tools, there are five key factors that engineers consider most influencing in their selection process: Ergonomics, Durability, Productivity, Accessibility & Accuracy.

There are many tooling options related to these five key factors. First we should clarify the definition of the key factors, then summarize how each tool option measures up to the key factors.

**Ergonomics**...measuring the safety and ease of use between the operator and tool during the assembly process.

**Durability**...measuring the overall performance, uptime and maintenance costs of a tool.

**Productivity**...measuring the tool's speed relative to takt time constraints.

**Accessibility**...measuring the tool's ability to access the fastener with operator ease and takt time constraints.

**Accuracy**...measuring the tools capability to meet your defined engineering specifications.

Primarily, there are two tool types for non-critical fastening:

- Discontinuous Drive Hydraulic Impulse
- Continuous Drive Clutch

**Factors of consideration when selecting a torque tool....**

## **Discontinuous Drive Hydraulic Impulse Tools**

**Tool Configurations....**Battery, Pistol, Inline, Right Angle, and Special Geared Attachment.



**Features...**

- ✓ Good weight to torque ratio
- ✓ High rpm
- ✓ Low vibration
- ✓ Pneumatic or Cordless
- ✓ Torque accuracy of +/- 10 to 15%
- ✓ Torque Range of 5-450 NM
- ✓ High precision components designed for longevity and durability in industrial environments
- ✓ Well balanced for low operator fatigue

**Ideal applications...**Pulse tools are best suited for hard to medium joints. Torque reaction is almost non-existent at torque specifications; thus no investment required for complicated reaction device. It is considered a one-handed tool. Based on the high rpm offering, this tool is ideal for demanding high production environments. Pulse tools require simple fluid changes based the demands of the application.

## **Continuous Drive Clutch Tools**

**Tool Configurations....**Battery, Pistol, Inline, Right Angle, and Special Geared Attachment.



## Features...

- ✓ Minimal reaction
- ✓ Pneumatic or Cordless
- ✓ Good power to weight ratio
- ✓ Torque accuracy of +/- 10%
- ✓ Torque Range of 0.3-70 NM
- ✓ High precision components designed for longevity and durability in industrial environments
- ✓ Well balanced for low operator fatigue

**Ideal applications...**Continuous Drive Clutch tools are best suited for softer joints with high prevailing torque. Under load, the continuous drive clutch tool maintains constant speed. It is considered a one-handed tool. However, with the constant speed, the operator is exposed to the process for a longer period. On applications over 50 NM you must evaluate the reaction which the operator may experience. Numerous torque reaction options exist to address this ergonomic concern.

Selecting the best tool for the application is sometimes not as simple as referencing catalog data and making a purchase. Many times to find the best tool for your application, it involves testing and trials on the production floor with your operators.

For more information or assistance with specifying the best tool for your non-critical application, contact us at:



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### About the Author



Darin Smith works from TorqTec offices outside Raleigh, NC. He has invested 20+ years working with O.E.M.s and a diverse manufacturing customer base in specifying assembly tools for fastening applications. As the Sales & Marketing Manager, Darin is available to assist you with your application question and tool trials.  
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### About TorqTec

We market products and services for addressing the productivity, quality and ergonomic concerns of the industrial manufacturing base. We offer a complete line of torque controlled tools; power assembly tools; pneumatic & cordless pulse tools; and cordless clutch tools. Our focus is to offer high quality, innovative solutions supported by 100+ years of combined industry experience and customer service.