

Selecting Controlled Clutch or Pulse Tools

Paladin's DC electric and pneumatic PULSE TOOLS are classified as "discontinuous drive" tools.

Paladin's DC electric and pneumatic ANGLE and SWINGBAR NUTRUNNERS are classified as "continuous drive" tools.

- These tools utilize a hydraulic chamber to generate torque in brief pulses under load
- Pulse tools are best suited to applications with little or no prevailing torque and for hard to medium joints
- Pulse tools provide fast cycle times with no torque reaction, even at high torques

- These gear-driven tools continuously supply power during the entire cycle
- While suitable for all joint rates, they are especially suited for softer draw applications
- These tools will maintain their speed under load

CONTROLLED TOOLS: DC ELECTRIC VS. PULSE

Feature	DC Electric Nutrunner	Controlled Pulse Tool
Critical torque control	Yes	Yes
Multiple parameters	Yes	Yes
Documentation and data storage	Yes	Yes
Cross-threading and stripping detection	Yes, with angle	Yes, with pulse count
Power sources	Electric only	Electric or pneumatic
Multistep run-downs	Available	Available

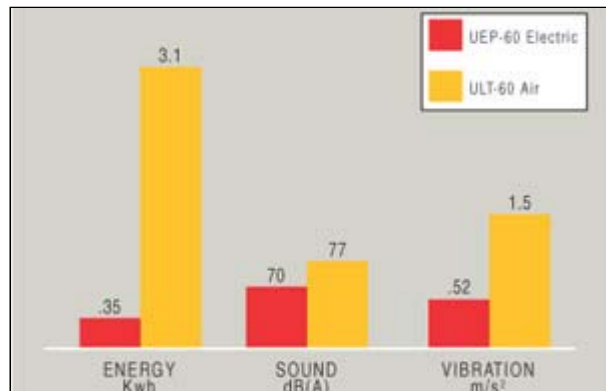
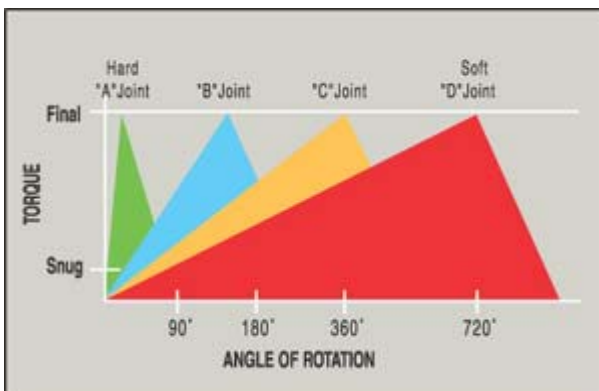
WHICH IS RIGHT FOR ME?

Electric Drive

- Air not convenient or available
- Quieter operation
- Speed control
- More efficient

Pneumatic Drive

- Easy installation
- Familiar maintenance
- Lower initial investment



WHAT ABOUT ANGLE?

A common use of DC electric nutrunners is to utilize a "torque and angle" strategy. Here, the tool runs down until the target torque is reached and shuts off. During this rundown, the controller also measures the angle of rotation from snug to finish. If this angle is within a prescribed range, the cycle is considered good. If the achieved angle is too small, the fastener may have cross threaded. If the achieved angle is too high, the fastener may have stripped or yielded. This provides an extra assurance that your process was

completed correctly.

With pulse tools being a discontinuous drive tool, one does not measure angle. Here, a "torque and pulse count" strategy is employed to achieve similar results. The number of pulses during the rundown is as consistent as the angle of rotation for clutch nutrunners. If the number of pulses during rundown is very small, the fastener may have cross threaded, and similarly for a high pulse count. All controllers that run pulse tools can utilize pulse count for your applications.

REVIEW

- A "hard joint" is an application that requires 30° or less of rotation from the snug point to final torque.
 - Metal to metal or hard slam
- A "soft joint" is an application that requires 720° or more of rotation from the snug point to final torque
 - Soft draw, gaskets, compressing, aligning parts