

# Bolting technology advancements transducerized vs current control

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Why is using a transducerized tooling system important to me and my customers? To understand the importance you must understand the accuracy difference between Transducerized and Current Controlled tooling.

**Current Controlled** (Open Loop) tools are a dedicated system consisting of a tool, cable and controller. They are pre-calibrated in a lab using an external transducer on a rundown fixture. The tool is operated on the external transducer at set torque points. The amount of current supplied by the system is matched up to the torque reading of the external transducer.

The lab will input these torque readings, which the system translates into the amount of current it needs to supply, to achieve the amount of torque required. Unfortunately current controlled tooling is an open loop design. Once the tool is removed from the external transducer there isn't any true torque feed back into the system. The system simply supplies the per-set current and the operator has to accept the torque was properly applied.

However a number of things affect the torque output but not the torque readings of the system. Things like temperature, gear wear, voltage and motor performance all affect the torque output but the system is unable to adapt and compensate for these changes. It's simply all guess work...! It's also a dedicated system. Something as simple as changing out the cable voids the calibration.

**Transducer Controlled (closed Loop)** tools like the AcraDyne HT system from AIMCO have the transducer built into the tool itself at the output shaft. The transducer is constantly measuring the torque in real time and feeding that back into the system. Variations of temperature, gear wear, voltage and motor performance do not affect the accuracy of the transducerized system because they all happen before the transducer. The system will simply keep applying power until the transducer reads the requested torque before shutting off.



The AcraDyne HT system also records date, time and rundown information of up to 32 different pre-set torque jobs stored in the controller. All the recorded torque data is easily exported to Excel with the touch of a finger. Modular design unlike current controlled systems, which are a dedicated system. The calibration of a transducerized tool is in the tool itself not the system. Tools, cables and controllers are all interchangeable. When the annual calibration is due you only need to send in the tool not the whole system.

If your customer relies on you for accurately applied torque. Take the Guess Work Out and use a closed loop transducerized system for unparalleled accuracy.

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