

THE PATENTED

TORQUE CONTROLLER

for Air Impact Wrenches & Pulse Wrenches

and All Pneumatic Torque Tools

Passion for Innovation Your Problems \sim Our Inspiration

www.zipptork.com

Torque Control Series Products



To meet the industrial development trend of Industry 4.0, our company has launched a full range of patented products related to bolting technology, providing cost-effective solutions for the industry. These include torque tool calibration, tool torque simulation & adjustment before work, bolting torque monitor or control during the bolting process, and residual torque verification after bolting. Thus, we can fully satisfy the Industrial Internet of Things (IIoT) application requirements.

Wireless Rotary Torque Transducer / Swing Type Torque Transducer

- It is suitable for various types of torque tools output torque calibration or residual torque verification, as well as with various pneumatic or electric impact type, oil pulse type, clutch type torque tools with automatic shutoff mechanism for real-time torque monitoring and data collection of bolting torque.
- With a patented anti-vibration design, it is **the only wireless torque transducer** in the industry that can be used for highvibration impact torque tools and torque control •
- Digitalization of "Interchangeable Head Torque Tools" for control & display bolting torque and angular movement in real-time as well as accessible with "HEADs" from any brand and joint mechanism •

Torque Controller

- It is capable of controlling the bolting torque of any discrete-type air impact wrenches, oil pulse wrenches, and clutch-type tools of any brand and any impact mechanism, as well as collecting data for uploading in real-time •
- Designed with patented control device and algorithm. It's **the ONLY air-driven discrete-type torque tool controller** in the field; three control modes are available for option, with the following control accuracy;

Pressure ModeAir Impact Wrenches within $\pm 15\% \sim \pm 20\%$
Air Oil Pulse Wrenches within $\pm 10\% \sim \pm 15\%$ Transducer ModeAir Impact Wrenches within $\pm 10\% \sim \pm 15\%$
Air Oil Pulse Wrenches within $\pm 5\% \sim \pm 10\%$
Accu ModeAccu ModeAir Impact Wrenches within $\pm 10\% \sim \pm 15\%$
Air Oil Pulse Wrenches within $\pm 10\% \sim \pm 15\%$
Air Oil Pulse Wrenches within $\pm 10\% \sim \pm 15\%$
Air Oil Pulse Wrenches within $\pm 10\% \sim \pm 10\%$

ZIPPTORK Smart Bolting Technology



Features

- No limitations on tool type, brand, or structural design.
- Full technical support for all bolt-tightening applications.
- Cost-effective and fully protected by DMIT patents.Wireless control and data acquisition capabilities.
- A flexible suite of application software tailored for IIoT and Industry 4.0 integration.

Torque Control Series Products

Torque Controller

Compatible with all Air Impact & Pulse Tools

- regardless of brand or torque mechanism -

Patented control device & algorithm / Dynamic torque control for discrete-type tools/ Cost-effectively make your air impact wrenches perform like a pulse wrench/Easy set-up in minutes/Seamless data collection, storage, and cloud upload for traceability/ Remote configuration and monitoring with IoT Gateway

Three control modes Pressure Mode Transducer Mode Accu Mode



TCA / TCB / TCC Torque Controller Batch count, barcode scanner, light Indicator, OK/NOK alert, record, and various job assemblies are available for ease of operation and userfriendliness.

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TCA Torque Controller





TCB-TCC Torque Controller

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Compatible with all air impact and pulse wrenches, regardless of brand or mechanism

Not recommended for clutch type **v** ratchet type & auto-shutoff type torque tools





Bolting Torque Control of Air Impact Wrenches & Pulse Wrenches

Air Impact Wrenches or Pulse Wrenches + TCA/TCB/TCC Torque Controller + Laptop, under Pressure Mode→

WiFi \rightarrow peripheral devices or cloud server



ZIPPTORK Bolting Technology

Bolting Torque Control of Air Impact Wrench & Pulse Wrenches

Air Impact Wrenches or Pulse Wrenches + TCB/TCC Torque Controller + TTES wireless Torque Transducer + Laptop,

under **Transducer Mode** \rightarrow WiFi \rightarrow peripheral devices or cloud server





Replace Heavy Pulse Wrenches with ZIPPTORK's Lightweight Smart Solution



An efficient yet cost-effective alternative of wheel torque solution



Wheel Torque Solution

OPTIMIZE YOUR PROCESS



STEP 1 Clean bare hub pilots, inspect for wear, and lubricate pads.



STEP 2 Clean the drum and studs. Inspect for fatigue with thread gauge.



STEP 6 Lubricate each nut with one drop of oil between the nut and washer. Rotate the washer to distribute the oil evenly.



STEP 7 Install the nuts by hand.

STEP 8

final torquing.



STEP 3 Thoroughly clean both sides of each wheel with the CP7202D sander and an appropriate abrasive. Inspect all surfaces for cracks and unusual wear.





Place two drops of oil near the end of the stud.



STEP 9 Using the BlueTork, follow the star pattern above to tighten the nuts to the specified torque.

Use a CP7748 impact wrench

on the lowest torque setting to

quickly snug all the nuts prior to



STEP 10 To ensure each nut has been torqued, a clockwise check may be performed. The BlueTork is pre-calibrated and is designed for precise torquing.

*Procedure illustrated is for reference only. Actual wheel preparation and assembly is dependant on wheel type and may vary. Please refer to the manufacturer's recommendations for proper wheel assembly procedures. Non-contractual pictures. Products color may vary.

Bolting Torque Control Application Embodiments An efficient yet cost-effective alternative of wheel bolting solution



An efficient yet cost-effective alternative of wheel politing solution

Take the Wheel Torque Solution above, for example; it tightens the wheel nuts to 650NM according to the steps until the preparation at the end of Step 7,

- 1. a CP7748 is used with the lowest torque to snug all the nuts, then quickly
- 2. using the CP7600, follow the star pattern to the specified torque.
- 3. Finally, use a click wrench to perform a clockwise check to ensure each nut has been torqued precisely.

It proceeds within 3 steps as \sim CP7748 \rightarrow CP7600 \rightarrow Click Wrench

Our alternatives for passenger cars and trucks/trailers are as follows;

For passenger cars \sim

Use a Mini Air Impact Wrench to follow the star pattern to tighten the nut to $60 \sim 90$ NM \rightarrow then,

Use a **Click Wrench** (340NM capacity) + **TTAS-180** (wireless torque transducer \sim 180NM capacity) + **Tablet (**Android or Windows APP). Follow the star pattern to tighten the nut to 120NM as specified and set it on the click wrench. It makes the audible " clicks " of the Click Wrench visible while keeping the operator I.D. \cdot the serviced wheel position \cdot number of nuts, and torque applied with the time recorded simultaneously with accuracy within \pm 5% \circ

It proceeds within 2 steps as ~ Mini Air Impact Wrench -> Click Wrench + TTAS-180 + Dongle + Tablet

For Truck / Trailer \sim

Use an Air Impact Wrench to follow the star pattern to tighten the nut to $450 \sim 550$ NM \rightarrow then, Use a **Click Wrench**(1000NM capacity) + **TTAS-1000** (wireless torque transducer \sim 1000NM capacity) + **Tablet** (Android or Windows APP). Follow the star pattern to tighten the nut to 650NM as specified and set it on the click wrench. It makes the audible " clicks " of the Click Wrench visible while keeping the operator I.D. \sim the serviced wheel position, \sim number of nuts, and torque applied with the time recorded

simultaneously with accuracy within \pm 5% \circ

It proceeds within 2 steps as \sim Air Impact Wrench ightarrow Click Wrench +TTAS-1000 + Tablet

Utilizing innovative and patented anti-vibration wireless torque transducers, process streaming, improving efficiency, and promoting quality, reliability, and traceability, we provide value-for-money and cost-effective services for our customers and strive to exceed their expectations.

A Compatible Application of *ZIPPTORK* Torque Controller



A Breakthrough in Tire Safety:

The power of an impact tool optimized for productivity and control. It delivers accurate and reactionless high-speed performance across various wheel types and specifications.

Productivity:

- Improves operational productivity by
- •No hand torquing
- •Eliminates torque sticks
- Eliminating the need for click wrenches
- •All tightening, snug & final torque, can be performed while the vehicle is still in the air
- •Saves 4-6 minutes per vehicle more on trucks and busses

Proof of Work:

- Automatically documents process
- Full documentation
- Data on labels includes Time & Date stamped; Target torque for wheel: Torque results from each lug; Calibration Due Date; Wheel Location; Mechanics signature



Why Use **ZIPPTORK** Bolting Control Technology



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

Be Aware

Identifying and finding the best torque tooling solution for your requirements is paramount to success in your assembly process.

Not all applications require the complexity and investment costs of DC tooling for critical fastening.

The key to your facility is to obtain knowledge of your assembly processes, problems, and ergonomic and safety needs. Repeatability, in-process monitoring, and 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





Intelligent Bolting Technology

Elevate your air impact/pulse wrenches' competitiveness with intelligent features, including

satisfactory torque controllability, data collection, storage, and cloud uploading ensuring

the traceability of job responsibilities & optimizes your customers' management quality

 \sim Making Industry 4.0 A Reality \sim