

**Snap-on**<sup>®</sup>  
INDUSTRIAL



# TORQUE INSTRUMENTS

INNOVATION, ACCURACY, DURABILITY

## Q: WHY CHOOSE



### A: Snap-on has innovative torque solutions for any industry.

Snap-on manufactures and sells an extensive array of torque products to cover the needs of professionals within important industries such as:

- Automotive
- Aviation/aerospace
- Marine
- Construction
- Energy / oil & gas
- Manufacturing
- Mining
- Military

### A: Snap-on offers a wide range of torque wrenches.

Snap-on's product line is diverse and there is a wide selection of choices regarding accuracy level, torque ranges, mechanical and electronic designs, ratchet types, swing arc, physical dimensions, ergonomics and overall features. If a unique application exists, Snap-on will have the torque solution for it.

### A: Snap-on services what they sell.

Snap-on stands by their product with industry-leading warranties, calibration, maintenance and servicing.

### A: The vast majority of Snap-on torque products are designed, made and assembled in the USA.

Snap-on believes in the importance of local manufacturing. Wherever possible, Snap-on uses American-made parts, American production facilities and a quality American workforce.

### A: Snap-on knows torque.

Snap-on knows that torque is critical. And with vehicle manufacturers investing heavily to reduce weight and increase fuel mileage by using a wide array of materials such as high-strength alloys, aluminum and engineered composites, torque is more important than ever. Improved capabilities and technology mean manufacturers can maintain exceptional tolerances on components that are contingent on accurate, consistent torque and angle application. Because of that, Snap-on has torque solutions for any application and are the established benchmark of quality and precision in all industries.

# TORQUE 101

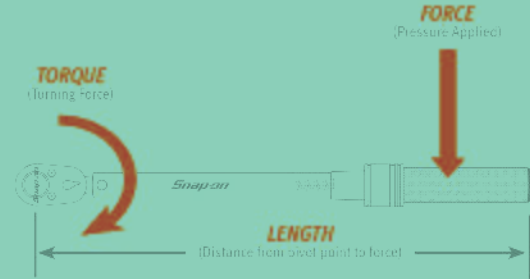


## Q: WHAT IS TORQUE?

A: Torque is rotational or turning force. Torque is measured in length and force: Length means distance from "center of drive" to "center of handle". Force means "pounds", "Newtons" etc.

## Q: HOW DO YOU CALCULATE TORQUE?

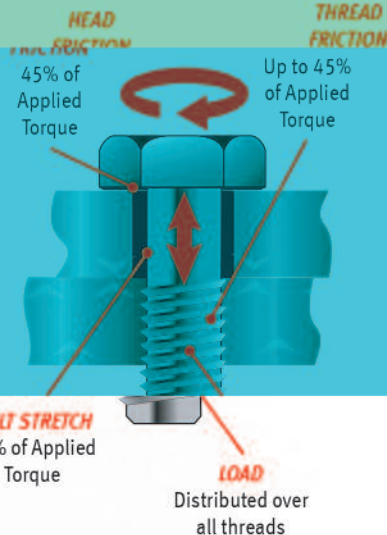
A: Torque = Length x Force  
The standard torque formula used to calculate torque is: "L x F = T"  
Example: 2 Ft. (length) x 30 lbs. (amount of force at center of handle) = 60 Ft. lbs. of torque (60 Ft. Lbs.)



## Q: WHAT DOES TORQUE DO?

A: Torque creates a "Clamp Load" to join two pieces of material.

- Bolts (or threaded fasteners), are designed to create clamping force, also called "clamp load".
- When torque is applied to a threaded fastener, it draws together the joint, (two pieces of material).
- As additional torque is applied to the fastener, the joint is pulled together creating a clamp load as the fastener begins the stretching process. It's this fastener stretch that creates and maintains clamping force, like a stretched bungee cord maintaining tension.
- The actual amount of clamp load is determined by several factors:
  - The amount of torque applied to the fastener.
  - The material and grade of the fastener.
  - The external friction on the joint – friction under the fastener head, and friction between the threads of the fastener and material it's connected to.



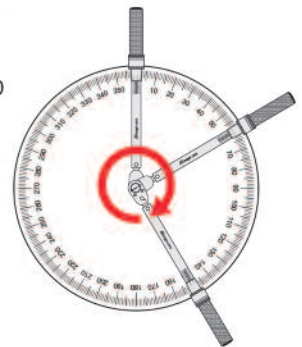
## Q: WHAT IS TORQUE PLUS ANGLE?

A: Torque Plus Angle creates a more exact clamp load for torque-sensitive equipment.

Auto manufacturers and makers of other high performance equipment are increasingly specifying fasteners with a combination of torque value followed by additional tightening with "angle", or degrees of wrench turn. Manufacturers can calculate a more exact final "clamp load" for their applications, since "torque & angle" minimizes the impact of thread or under-head friction.

### EXAMPLE

Apply 80 ft. lbs. of torque, then apply 90 degrees of rotation



## U.S. Patents

Snap-on has always been at the forefront of tool innovation, and torque products is no exception. Illustrated here are the US Patent numbers granted to Snap-on for the Control Tech & TechAngle models.

U.S. Patent No.	Model
9156148	Control Tech & TechAngle
9242356 / 9839997	Control Tech & TechAngle
9395257	Control Tech & TechAngle
9523618	Control Tech
D699531	Control Tech
D702519	TechAngle



## Q: WHY IS APPLYING PROPER TORQUE IMPORTANT?

**A: Creating proper Clamp Load prevents damage and equipment failures.**

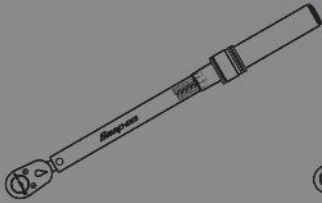
- Safety & Performance: Applying accurate torque is critical to assembly applications, engines and precision equipment.
- Creating a proper clamp load is the main objective when applying torque to a fastener. Engine cylinder heads, pipe coupling, wheels, all need to be "clamped" uniformly to specific torque values.
- There are three main factors that affect the correct application of torque: (1) Condition of components, (2) Accuracy of torque instrument, (3) Properly applied torque values.
- Applying torque incorrectly can lead to stripped threads, premature loosening or broken fasteners that can cause catastrophic failure. Leaking joints may cause engine or equipment failures.



## Q: WHAT IS A TORQUE INSTRUMENT AND WHAT DOES IT DO?

**A: Any device that applies a pre-determined amount of torque to a fastener.**

- It may be mechanical or electronic in design.
- A torque wrench has some type of indicating device which lets the operator know when the correct torque has been achieved: "click" or "impulse-break" feel; sound; lights; gauge; or some combination of these.



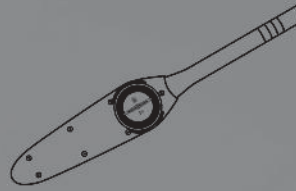
### MICROMETER (CLICK TYPE)

The most popular type of mechanical torque wrench. An internal spring is tightened by turning the handle. The spring pushes against a block, and both are calibrated so the block pivots when the torque setting is reached. This quick pivoting creates the "click" sound. When the force at the handle is released, the block resets to its original position and is ready for the next torque application.



### SPLIT BEAM (QUICK ADJUST)

Also called a "Quick Adjust" wrench, this type is most popular for automotive tire and wheel installation and other heavy use environments. Torque value is set by turning a small knob on the side of the wrench. Two internal arms (the "split beam") bend when force is applied at the handle, and a trigger device reacts when the set torque is reached, causing a "click"



### MECHANICAL DIAL

Uses a fixed, non-ratcheting square drive. Available in single scale and dual scale models. As force is applied at the handle, an internal beam flexes against a precision movement which rotates a needle pointing to the torque value against the dial scale. A memory needle indicates the highest torque value achieved.



### DIGITAL DIAL

More accurate than a mechanical dial, and easier to use and read because of large LCD readout and color LED light bar. Utilizes an internal electronic strain gage to measure torque. Uses a fixed, non-ratcheting square drive as do the mechanical dial wrenches. The strain gage positioning on the torsion drive allows this instrument to be non-length sensitive.



### ELECTRONIC

Most versatile and accurate torque wrench. Operates by means of a internal electronic strain gage with digital readout. Torque value setting can be heard (beep) felt and seen (digital screen and lights). Snap-on TechAngle models enable fast and easy application of desired torque, plus additional angle application through internal Gyro chip which measures up to 360 degrees of rotation.



### TORQUE SCREWDRIVERS

Used for applying torque in low torque applications, such as electronic assembly manufacturing, medical devices, etc. The cam-over design prevents over-torquing. Ergonomic tri-lobe handle design. Available in adjustable models, or factory preset to a single torque value.

# TORQUE TERMS

**A.S.M.E.** – American Society of Mechanical Engineers, known for setting codes and standards for mechanical devices, including torque.

**CW (Clockwise) / CCW (Counter Clockwise)** – Used in all accuracy statements & Certs. Some tools have different accuracy depending on direction of use.

**Calibration** – Adjusting a torque tool or a torque transducer in order to bring it back within spec, which is performed on a calibration system such as the Snap-on TTC2200 or TTC2800. Typical calibration accuracy is  $\pm 4\%$  CW of indicated value.

**Certification** – A form which lists the results of the calibration test. Almost all Snap-on tools are supplied with a N.I.S.T. traceable cert. Snap-on also conforms to the ISO 6789, which is the standard set forth by the International Organization for Standardization (ISO) for torque measurement.

**Cycling** – For mechanical torque wrenches, to "exercise" the wrench for use. With a new wrench, and for first use of the day, set the wrench at the desired torque value and pull for several clicks on a stationary fastener. This exercises the internal wrench mechanism and ensures smooth and accurate operation.

**ISO 17025** – A laboratory accreditation standard. Most all torque wrenches (including Snap-on) do not come with ISO 17025 accredited certifications. But torque wrenches can receive accredited certification for an additional fee (range of \$50-\$200 depending on tool) if the end-user desires.

**N.I.S.T.** – National Institute of Standards and Technology is a non-regulatory agency of the US Department of Commerce. They are the federal agency that sets standards for all weights and measures in the U.S. All Snap-on torque products are calibrated on testers calibrated with weights and arms that are all traceable back to N.I.S.T.

**Newton** – A common unit of weight used for torque from the SI system (not metric). Equivalent to 102 grams / .273 pounds.

**Rolling Torque** – Measuring the prevailing torque, or resistance, of a rotating shaft.

**Strain Gage** – Electronic device used to measure the bend (turn resistance) of an object. The measured strain is then translated into torque.

**Testing** – Determines the accuracy of the tool. It does not include adjusting the tool. Commonly called "as found" data.

**Torque Plus Angle (T&A)** – Tightening the fastener to a specific torque, then further turning a specific number of degrees (angle) of rotation. Example: 70 ft. lbs. + 40 degrees.

**Torque to Yield (TTY)** – Same method as T&A except utilizes "single use" or "TTY" fasteners (special one-time-use fasteners which are stretched into their yield zone and cannot be used again).

**Snap-on Industrial**

THERE IS A DIFFERENCE



Accuracy is 10% from 20-100% of full scale in clockwise direction only

- Lightweight, red aluminum body with stainless steel shank
- Comfortable ergonomic tri-lobe grip and magnetic bit retention
- Textured body provides a nonslip grip
- Not supplied with certificate of calibration



QDRIVER1P

**Preset**

Model	Range	Increments	Length
QDRIVER1P	6-32 in.-oz. (4-22 N•cm)	–	4 9/16"
QDRIVER2P	10-100 in.-oz. (7-70 N•cm)	1 in. oz.	5 5/8"
QDRIVER3P	1.5-15 in.-lb. (16-169 N•cm)	0.02 in. lb.	5 5/8"
QDRIVER4P	4-40 in.-lb. (45-451 N•cm)	0.5 in. lb.	6"

ASME© B107.300-2010 Type III, Class A, Style 2, Design A



QDRIVER2

**Adjustable**

Model	Range	Increments	Length
QDRIVER2	20-100 in.-oz. (14-70 N•cm)	1 in.-oz.	5 7/16"
QDRIVER3	3-15 in.-lb. (3-169 N•cm)	0.2 in.-lb.	6 1/4"
QDRIVER4	5-40 in.-lb. (56-451 N•cm)	0.5 in.-lb.	6 11/16"
QDRIVER4NM	50-450 N•cm	5 N•cm	6 11/16"

ASME© B107.300-2010 Type III, Class A, Style 1, Design A



**TPMS Adjustable Torque Screwdriver**

- For maintaining/installing popular styles of tire pressure monitoring sensors
- Manufactured from aircraft-grade aluminum
- Dedicated torque measurements for popular TPMS ratings (4, 12, 35 in-lb)

Model	Range, Detected	Length	Accuracy
QDTPMS35	4 in.-lb., 12 in.-lb., 35 in.-lb.	6 5/8"	+/- 6%

Approaching Target Target Achieved Over Torque



ATECHMS80F

**TechAngle® Screwdriver**

- Four alert modes (LCD, LED, Audible, Vibratory)
- Advanced features: programmable sleep timer, cycle counter, overload indication, calibration alert, battery level, language selection and torque record memory including 10 presets and storage for up to 50 records
- Three modes of operation: Torque, Angle, Torque Then Angle
- Displays in 6 units of measure: in.-lb., in.-oz., ft.-lb., Nm, Kg-cm, cNm, angle
- Guaranteed accuracy +/- 2% CW and 3%CCW at 20%-100% full scale (+/- 4%CW and 6% CCW at 4% to 19% of full scale)

Model	Drive	Range	Increments	Length
ATECHMS80F	1/4" Female Hex Drive	4-80 in.-lbs. (0.45-9 Nm)	0.01 in. lbs.	7 1/2"
ATECHMS80M	1/4" Male Drive	4-80 in.-lbs. (0.45-9 Nm)	0.01 in. lbs.	7 1/2"

**Torque Limiting Drivers**



QDRIVER2A

**Preset**

- Cam over torque limiting clutch free wheels when set torque is achieved
- Ideal selection for assembly line work where same requirement is constant

Model	Range	Increments	Length
QDRIVER2A	20-100 in-oz (14-70 N•cm)	1 in.-oz.	5 7/16"
QDRIVER3A	3-15 in-lb (34-169 N•cm)	0.2 in.-lb.	6 1/4"
QDRIVER4A	5-40 in-lb (56-451 N•cm)	0.5 in.-lb.	6 11/16"
QDRIVER4NMA	50-450 N•cm	5 N•m	6 11/16"

**Adjustable**

- Micrometer type adjustment
- Clutch allows 25° of free rotation on reaching set torque
- Guaranteed accuracy: within ±4% of setting from 20% of capacity to full capacity clockwise and counterclockwise



QTS135

Model	Range	Increments	Length
QTS135	5-35 in.-lb.	0.5 in.-lb	7"
QTSP135	5-35 in.-lb.	0.5 in.-lb	7- 1/2"

All Snap-on® Torque Wrenches, Drivers and Testers are provided with a Certificate of Calibration (unless otherwise indicated). All wrenches and drivers are calibrated per ASME® and ISO® Standards for Accuracy, from 20% to 100% of full scale, using NIST® traceable equipment.

QD Series Adjustable Click-Type Torque Wrenches provide consistently accurate readings and rugged, long life.



**SNAP-ON**  
Made in U.S.A.

**FIXED RATCHET**

**FIXED**



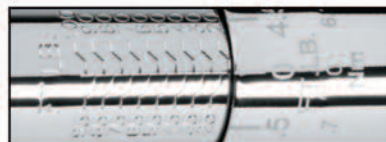
**COMPACT**

**FIXED**



**FOUR DIFFERENT HEAD STYLES AVAILABLE**

- QD models are available in Fixed, Compact, Fixed Ratchet and Flex head versions



**EASY-TO-READ ROLL-MARKED SCALE**

- QD models with the "A or B" suffix have roll-marked scales for better performance and visibility in varying light conditions

**CERTIFICATE OF CALIBRATION**

- Actual certification readings and individual instrument serial number are included
- Each factory-calibrated torque instrument, is certified to meet ASME B107.300-2010 (B107.14) and was calibrated on a torque standard traceable to the National Institute of Standards Technology (NIST®)

**ACCURACY**

- All QD Series Torque Instruments are accurate to ±4% CW and ±6% CCW from 20% of full scale to full scale unless otherwise noted

**LONG LIFE RATCHET HEAD**

- The QD Series features maintenance free, high strength, sealed ratchet head which keeps out dirt and moisture

**MINIMAL FRICTION "HOURLASS" CAM**

- Retains and releases lubricant where needed to reduce friction

**POSITIVE STOP**

- Instrument can not be accidentally disassembled if wound down past scale

**KNURLED HANDLE**

- For a secure non-slip grip

**INCLUDES CASE**

- For safe transport and storage

Square Drive	Model*	Head Style	Ratchet Teeth	Spring Arc	Range	Increments	Length	Head Width	Head Depth
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**QD Series Adjustable Click-Type (in.-lb.)**

1/4"	QD1R00A	Fixed Ratchet	36	10°	10-50 in.-lb.	0.5 in.-lb.	9 7/8"	7/8"	7/16"
1/4"	QD1R200A	Fixed Ratchet	36	10°	40-200 in.-lb.	1 in.-lb.	11 1/10"	7/8"	7/16"
3/8"	QD2R000A	Fixed	-	-	200-1,000 in.-lb.	5 in.-lb.	14 9/16"	1"	1 3/16"
3/8"	QD2R1000A	Fixed Ratchet	80	4.5°	200-1,000 in.-lb.	5 in.-lb.	15 9/16"	1 5/32"	9/16"
1/2"	QD3R1600A	Fixed Ratchet	80	4.5°	300-1,600 in.-lb.	10 in.-lb.	19"	1 5/8"	3/4"
1/2"	QD32500A	Fixed	-	-	500-2,500 in.-lb.	10 in.-lb.	18 1/8"	1"	1 1/4"
1/2"	QD3R2500A	Fixed Ratchet	80	4.5°	500-2,500 in.-lb.	10 in.-lb.	19 1/8"	1 5/8"	3/4"

**QD Series Adjustable Click-Type (ft.-lb.)**

3/8"	QD2100A	Fixed	-	-	20-100 ft.-lb.	0.5 ft.-lb.	14 9/16"	1"	1 3/16"
3/8"	QD275A	Fixed	-	-	15-75 ft.-lb.	0.5 ft.-lb.	14 9/16"	1"	1 3/16"
3/8"	QD2FR75B †	Flex	80	4.5°	5-75 ft.-lb.	0.5 ft.-lb.	15 5/8"	1 5/32"	9/16"
3/8"	QD2R100A	Fixed Ratchet	80	4.5°	20-100 ft.-lb.	0.5ft.-lb.	15 9/16"	1 5/32"	9/16"
1/2"	QD3150A	Fixed	-	-	30-150 ft.-lb.	1 ft.-lb.	18"	1"	1 1/4"
1/2"	QD3250A	Fixed	-	-	50-250 ft.-lb.	1 ft.-lb.	23 3/16"	1"	1 1/4"
1/2"	QD3R150A	Fixed Ratchet	80	4.5°	30-150 ft.-lb.	1 ft.-lb.	19"	1 5/8"	3/4"
1/2"	QD3R250A	Fixed Ratchet	80	4.5°	50-250 ft.-lb.	1 ft.-lb.	24 3/16"	1 5/8"	3/4"
1/2"	QD3FR250A* †	Flex	80	4.5°	50-250 ft.-lb.	1 ft.-lb.	25 3/4"	1 5/8"	3/4"
1/2"	BRUTUS3R300**	Fixed Ratchet	36	10°	60-300 ft.-lb.	2 ft.-lb.	32 1/2"	1 3/4"	3/4"
3/4"	QD4400A	Fixed	-	-	75-400 ft.-lb.	2.5 ft.-lb.	33 3/4"	1 1/2"	1 1/2"
3/4"	QD4600A	Fixed	-	-	100-600 ft.-lb.	5 ft.-lb.	40 3/4"	1 1/2"	1 1/2"
3/4"	QD4R400A	Fixed Ratchet	32	11°	75-400 ft.-lb.	2.5 ft.-lb.	35 3/4"	2 1/2"	1 1/4"
3/4"	QD4R600A	Fixed Ratchet	32	11°	100-600 ft.-lb.	5 ft.-lb.	42 3/4"	2 1/2"	1 1/4"
1"	QD5R1000A	Fixed Ratchet	30	12°	200-1,000 ft.-lb.	5 ft.-lb.	71"	3 1/8"	1 1/2"

**QD Series Metric Adjustable Click-Type (kg-m, kg-cm)**

3/8"	QD2RM1000A	Flex	80	4.5°	200-1,000 kg-cm	5 kg-cm	15 9/16"	1 5/32"	9/16"
1/2"	QD3RM30A	Fixed Ratchet	80	4.5°	6-30 kg-m	0.2 kg-m	19"	1 5/8"	3/4"

**QD Series Newton Meter Adjustable Click-Type (N•m)**

1/4"	QD1RN6A	Fixed Ratchet	36	10°	1-6 N•m	0.5 N•m	9 7/8"	7/8"	7/16"
1/4"	QD1RN25A	Fixed Ratchet	36	10°	5-25 N•m	0.1 N•m	11 3/4"	7/8"	7/16"
3/8"	QD2RN25A	Compact	36	10°	5-25 N•m	0.1 N•m	11 3/4"	7/8"	7/16"
3/8"	QD2RN50A	Fixed Ratchet	80	4.5°	10-50 N•m	0.5 N•m	15 9/16"	1 5/32"	9/16"
3/8"	QD2RN100A	Fixed Ratchet	80	4.5°	20-100 N•m	0.5 N•m	15 9/16"	1 5/32"	9/16"
1/2"	QD3RN200A	Fixed Ratchet	80	4.5°	40-200 N•m	2 N•m	19"	1 5/8"	3/4"
1/2"	QD3RN350A	Fixed Ratchet	80	4.5°	70-350 N•m	2 N•m	24 3/16"	1 5/8"	3/4"
3/4"	QD4RN800A	Fixed Ratchet	32	11°	150-800 N•m	5 N•m	42 3/4"	2 1/2"	1 1/4"
1"	QD5RN1500A	Fixed Ratchet	30	12°	300-1,500 N•m	10 N•m	68 7/16"	3 1/8"	1 1/2"

\* Unidirectional wrench (Clockwise only) \*\* Heavy duty main tube and yoke, +/- 6% accuracy † Heavy duty yoke/new long-life cam

All Snap-on® Torque Wrenches, Drivers and Testers are provided with a Certificate of Calibration (unless otherwise indicated). All wrenches and drivers are calibrated per ASME® and ISO® Standards for Accuracy, from 20% to 100% of full scale, using NIST® traceable equipment.

**Snap-on Industrial**

**THERE IS A DIFFERENCE**



# ATECH

The advanced technology and intuitive design of the new TechAngle® Torque Wrench from Snap-on® makes it possible to tighten fasteners to exacting standards, under even the most demanding conditions, faster and with more accuracy than ever before.

## TechAngle® Electronic Torque Wrenches

### Advanced Features

- DUAL PROGRESSIVE LEDs allow user to see active torque at various work positions; enables user to anticipate torque target for more accurate torque application
- LARGE LCD SCREEN with bright backlight; numbers become larger and bolder during active torque for optimal viewing
- FOUR ALERT MODES (LCD, LED, Audible, Vibratory) provide excellent feedback in all working conditions
- LOW PROFILE BUTTONS protect against accidental activation

### Multiple Measurement Modes

- SIX MEASUREMENT MODES (ft.-lb, in.-lb, Nm, dNm, kg.-cm, and angle) at the touch of a button

### Programmable

- TEN PRESETS allow programming of common torque applications which saves time
- ADVANCED FEATURES include cycle counter, customizable sleep timer, language selection, auto torque calculation for torque adapters, calibration alerts, battery level indication, and numerous alert mode customizations. These features allow you to customize the torque wrench to your work preferences
- TORQUE THEN ANGLE MODE allows the user to torque fasteners and then switch to angle mode without removing the torque wrench from a fastener

### Multi-Lingual Display

- Programmable to display commands and settings in English, Spanish, French or German

### Highly Accurate

- Torque measurement; 2% CW and 3% CCW

### Durability

- POWER INTERRUPTION TECHNOLOGY prevents loss of continuity if dropped; prevents loss of work during head bolt pattern applications
- 2-YEAR WARRANTY on TechAngle® and Control Tech™ models
- STORAGE CASE included



### Sealed Head

Keeps contamination out and lubrication in for better performance and longer tool life.



### Dual 80® Technology

Precise yet strong ratchet function with minimal ratcheting arc and very little lost motion, for ratcheting in tighter areas.

### Angle Head Control

Head moves ±15° to avoid obstructions. Torque accuracy: ±2%CW, ±3%CCW, 20% to 100% of full scale. Angle accuracy: ±1% of reading, ±1° at angular velocity >10°/sec.

### Strong and durable 100% Steel Body Construction

Features chrome plating for superior oxidation resistance



## TechAngle® Steel Models



### Calculates Rolling Torque

Some models measure the rotating resistance of a fastener or a component such as a cam or vehicle differential preload.

## Techangle® All Steel Torque Wrenches

Square Drive	Model*	Handle Color	Head Style	Gear Teeth	Swing Arc	Range (in.-lb.)	Range (ft.-lb.)	Range (N·m)	Length (in.)	Head Width (in.)	Head Depth (in.)	Weight w/o batteries lb.(kg)	Battery Type (qty)
1/4"	ATECH1FS100	Chrome	Sealed Flex Head	72	5°	4-100	0.33-8.33	0.45-11.3	11 5/8"	7/8"	7/16"	0.93 (0.42)	Lithium (1)
1/4"	ATECH1FS240	Chrome	Sealed Flex Head	72	5°	12-240	1-20	1.36-27.12	11 5/8"	7/8"	7/16"	0.93 (0.42)	Lithium (1)
3/8"	ATECH2CS100	Chrome	Sealed Flex Head	72	5°	4-100	0.33-8.33	0.45-11.3	11 5/8"	7/8"	7/16"	0.93 (0.42)	Lithium (1)
3/8"	ATECH2CS240	Chrome	Sealed Flex Head	72	5°	12-240	1-20	1.36-27.12	11 5/8"	7/8"	7/16"	0.93 (0.42)	Lithium (1)
3/8"	ATECH2FS100	Chrome	Sealed Flex Head	80	4.5°	60-1,200	5-100	6.8-135	15 7/16"	1 1/4"	9/16"	2.85 (1.29)	AA Alkaline (3)
1/2"	ATECH3FS250	Chrome	Sealed Flex Head	80	4.5°	150-3,000	12.5-250	16.9-339	26 3/4"	1 5/8"	3/4"	4.35 (1.97)	AA Alkaline (3)
3/4"	ATECH4RS600	Chrome	Sealed Flex Head	32	11°	360-7,200	30-600	40.7-813.5	48 11/16"	2 1/2"	1 1/4"	10.95 (4.96)	AA Alkaline (3)

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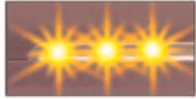
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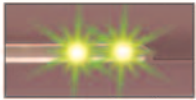
THERE IS A DIFFERENCE



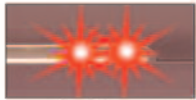
**Dual Progressive LED's**  
Allows user to see active torque at various work positions. Enables user to anticipate torque and slow down as they get closer to desired torque level.



Approaching Target

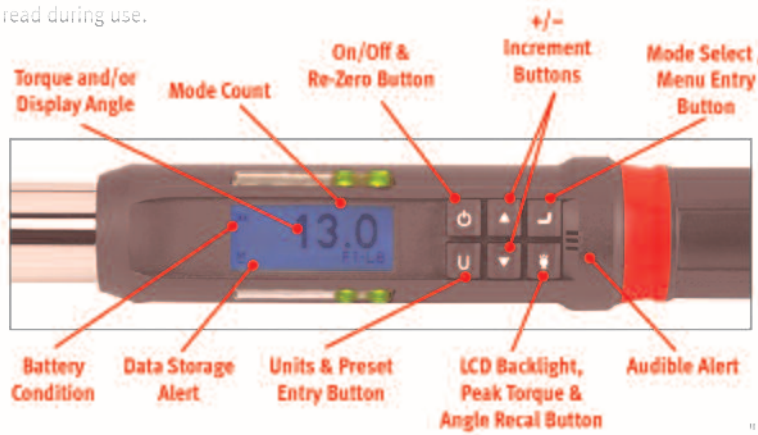


Target Achieved



Over Torque

**Easy-to-Read Backlit LCD Display**  
Large LCD screen-numbers become larger and bolder during active torque making it easier to read during use.



**Low Profile Buttons**  
Protects against accidental activation.



**Multi-Sensory Indicators**  
Along with the easy-to-read LCD screen and LED indicator lights, the audible beep and handle vibration work together to signal when torque is within the targeted range.



**Protected Battery Cap**  
Designed with solid brass contacts prevents accidental loosening and ensures continuity.

**Comfort Grip with Flared End**  
"Motorcycle-style" handle with seamless textured grip offers a comfortable, non-slip surface. Flared end prevents your hand from slipping off during high leverage applications.

**Fully Programmable**  
Quickly change units of measure appropriate for specific applications.

**Calculates Rolling Torque** All models measure the rotating resistance of a fastener or a component such as a cam or vehicle differential preload.

**Durable Housing** Temperature and chemical resistant housing protects internal electronics from drops, collisions and more.

## TechAngle® Soft Grip Models



Available in Multiple Housing Colors

## Techangle® Torque Wrenches

Square Drive	Model*	Handle Color	Head Style	Gear Teeth	Swing Arc	Range (in.-lb.)	Range (ft.-lb.)	Range (N•m)	Length (in.)	Head Width (in.)	Head Depth (in.)	Weight w/o batteries lb. (kg)	Battery Type (qty)
1/4"	ATECH1FR240B	Black	Sealed Flex Head	72	5°	12-240	1-20	1.36-27.12	16 7/16"	7/8"	7/16"	1.9 (8.6)	AA Alkaline (3)
3/8"	ATECH2F100GB	Green	Sealed Flex Head	80	4.5°	60-1,200	5-100	6.8-135.0	17 15/16"	1 1/4"	9/16"	2.3 (1.04)	AA Alkaline (3)
3/8"	ATECH2F1000B	Orange	Sealed Flex Head	80	4.5°	60-1,200	5-100	6.8-135.0	17 15/16"	1 1/4"	9/16"	2.3 (1.04)	AA Alkaline (3)
3/8"	ATECH2F1000RB	Red	Sealed Flex Head	80	4.5°	60-1,200	5-100	6.8-135.0	17 15/16"	1 1/4"	9/16"	2.3 (1.04)	AA Alkaline (3)
3/8"	ATECH2FR100B	Black	Sealed Flex Head	80	4.5°	60-1,200	5-100	6.8-135.0	17 15/16"	1 1/4"	9/16"	2.3 (1.04)	AA Alkaline (3)
1/2"	ATECH3F250GB	Green	Sealed Flex Head	80	4.5°	150-3,000	12.5-250	16.9-339	26 5/8"	1 5/8"	3/4"	3.75 (1.68)	AA Alkaline (3)
1/2"	ATECH3F2500B	Orange	Sealed Flex Head	80	4.5°	150-3,000	12.5-250	16.9-339	26 5/8"	1 5/8"	3/4"	3.75 (1.68)	AA Alkaline (3)
1/2"	ATECH3F2500RB	Red	Sealed Flex Head	80	4.5°	150-3,000	12.5-250	16.9-339	26 5/8"	1 5/8"	3/4"	3.75 (1.68)	AA Alkaline (3)
1/2"	ATECH3FR250B	Black	Sealed Flex Head	80	4.5°	150-3,000	12.5-250	16.9-339	26 5/8"	1 5/8"	3/4"	3.75 (1.68)	AA Alkaline (3)
1/2"	ATECH3FR300B	Black	Sealed Flex Head	80	4.5°	1,480-3,600	15-300	20.3-406.7	30"	1 5/8"	3/4"	3.95 (1.79)	AA Alkaline (3)

All Snap-on® Torque Wrenches, Drivers and Testers are provided with a Certificate of Calibration (unless otherwise indicated). All wrenches and drivers are calibrated per ASME® and ISO® Standards for Accuracy, from 20% to 100% of full scale, using NIST® traceable equipment.

**Snap-on Industrial**

THERE IS A DIFFERENCE



# CONTROL TECH™

With robust features such as multi-sensory torque indicators, multi-lingual display, USB data downloads, programmable settings and built-in calibration, Snap-on Control Tech™ digital torque wrenches deliver high performance in the most demanding fields.



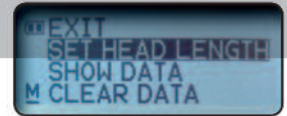
## Control Tech™ Electronic Torque Wrenches

Control Tech™ Electronic Torque Wrenches provide instant data on the exact torque actually applied, enabling a more precise torque application across multiple fasteners. Every model features a large, backlit LCD screen for better visibility in a variety of working conditions and a high capacity memory for storage of 1,500 readings. And unlike click-type wrenches, digital wrenches tell the user when calibration is due, can be programmed for specific settings, and stores a data trail for an extra measure of validation.



### Dual 80® Technology

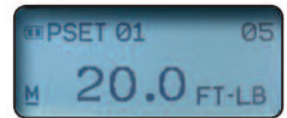
- Precise yet strong ratchet function with minimal ratcheting arc and very little lost motion



### Built-In Calibration Factor\*

- Eliminates the need to perform manual calculations (use with interchangeable heads and torque adapters)

### User-Friendly Displays



### Fully Programmable

- 50 memory presets with a batch count of 99
- Presets can be locked to prevent inadvertent changes or tampering

### Sequence Programming

- Program different torque applications in sequence and lock-in job mode to ensure the operator follows sequence without error

### Multilingual Display

- Programmable to display commands and settings in English, Spanish, French or German



### LED Indicator Lights

- Dual-side LED indicator lights with configurable settings provide operational guidance
- Click-types can easily be overtorqued by as much as 20% because the user doesn't stop pulling the wrench the instant it clicks. Digital wrenches have yellow/green/red lights that tell the user when to stop pulling

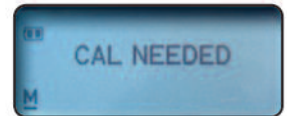
### Calculates Rolling Torque

- All models measure the rotating resistance of a fastener or a component such as a cam or vehicle differential preload



### Multi-Sensory Indicators

- Ideal for any working condition thanks to audible, tactile and visual indicators
- The easy-to-read LCD screen, LED indicator lights, audible beep and handle vibration work together to signal when torque is within the targeted range



### Calibration Due Indicator\*

- Alerts you when calibration is needed

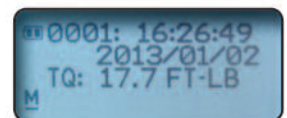


### Convenient Data Download

- USB plug and play technology allows data download without additional software for an audit proof trail and process control

### Torque & Angle Combo Mode

- The most accurate and fastest way to achieve torque plus angle in a single motion
- Control torque accuracy to +/- 2% CW and +/- 3% CCW
- Control angle accuracy to +/- 1% of reading and +/- 1°

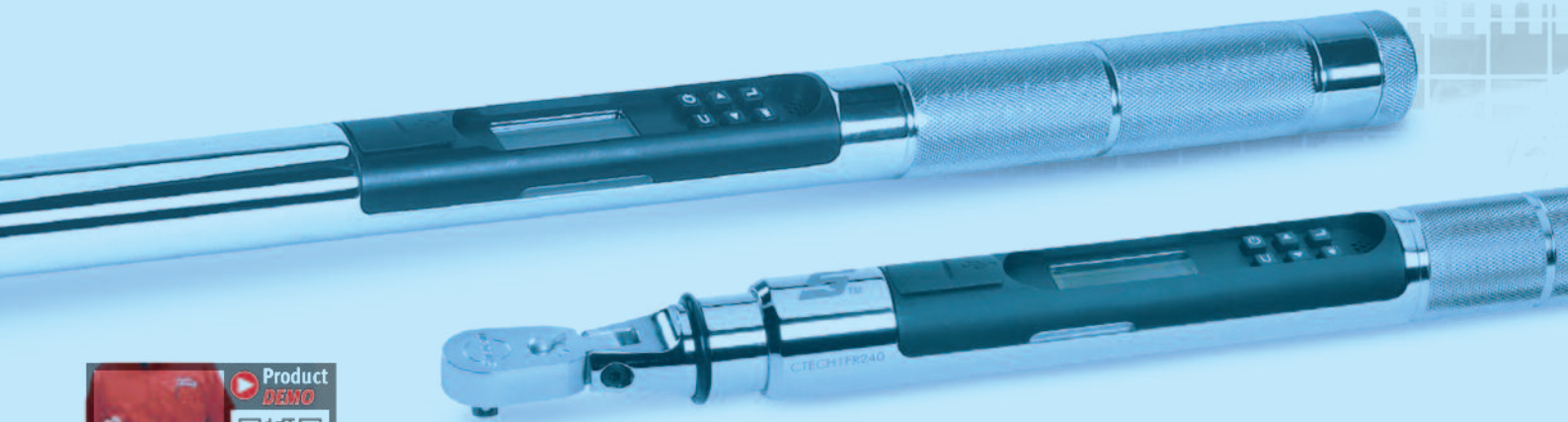


### Reliable Data Trail

- Time stamped data trail for quality control, job auditing and torque verification

All Snap-on® Torque Wrenches, Drivers and Testers are provided with a Certificate of Calibration (unless otherwise indicated). All wrenches and drivers are calibrated per ASME® and ISO® Standards for Accuracy, from 20% to 100% of full scale, using NIST® traceable equipment.





## Control Tech™ Electronic Torque Wrench

Square Drive	Model*	Handle Color	Head Style	Gear Teeth	Swing Arc	Range (in.-lb.)	Range (ft.-lb.)	Range (N•m)	Length (inches/mm)	Weight without batteries	Battery Type (qty)
1/4"	<b>CTECH1FR240A</b>	Chrome	Sealed Flex Head	72	5°	12-240	1-20	1.4-27.2	14 1/8" (358 mm)	2 lb. (0.9 kg)	AA Lithium (3)
3/8"	<b>CTECH2FR100A</b>	Chrome	Sealed Flex Head	80	4.5°	60-1,200	5-100	6.8-135.6	17 1/4" (437 mm)	2.7 lb. (1.2 kg)	AA Lithium (3)
1/2"	<b>CTECH3FR250A</b>	Chrome	Sealed Flex Head	80	4.5°	150-3,000	12.5-250	16.9-339	26 3/4" (678 mm)	4.5 lb. (2.10 kg)	AA Lithium (3)
3/4"	<b>CTECH4R600A</b>	Chrome	Sealed Fixed Head	32	11°	360-7,200	30-600	40.7-813.5	48 5/8" (1,234 mm)	10.5 lb. (4.8)	AA Lithium (3)

## NEW Control Tech™ Micro Electronic Torque Wrench

**THE SAME GREAT FEATURES OF THE CONTROL TECH IN A SMALLER SCALE**

The NEW Control Tech™ Micro Electronic Torque Wrench boasts all of the same, great features you come to expect from the Control Tech line of wrenches, but in a smaller, more compact scale.



Square Drive	Model*	Handle Color	Head Style	Gear Teeth	Swing Arc	Range (in.-lb.)	Range (ft.-lb.)	Range (N•m)	Accuracy	Length (inches/mm)	Weight without batteries	Battery Type (qty)
1/4"	<b>CTECH1MR100</b>	Chrome	Fixed Head	72	5°	5-100	0.42-8.33	0.56-11.3	± 2% CW ± 3% CCW	11" (279.4 mm)	0.9 lb. (0.42 kg)	AA Lithium (1)
1/4"	<b>CTECH1MR240</b>	Chrome	Fixed Head	72	5°	12-240	1-20	1.36-27.12	± 4% CW ± 6% CCW	11 5/8" (294.64 mm)	0.93 lb. (0.42 kg)	AA Lithium (1)
3/8"	<b>CTECH2MR100</b>	Chrome	Fixed Head	72	5°	5-100	0.42-8.33	0.57-11.3	± 2% CW ± 3% CCW	11" (279.4 mm)	0.9 lb. (0.42 kg)	AA Lithium (1)
3/8"	<b>CTECH2MR240</b>	Chrome	Fixed Head	80	4.5°	12-240	1-20	1.36-27.12	± 4% CW ± 6% CCW	11 5/8" (294.64 mm)	0.93 lb. (0.42 kg)	AA Lithium (1)

### Convenient NEW Features

- New 1-piece design for improved strength
- Easy battery replacement
- One AA Lithium battery yields 40 hours of continuous use (also accepts Alkaline or NiMH re-chargeable - Not included)



**NEW FOD Compliant Integrated USB Port with Sliding Door**

### NEW, Shorter, Slimmer, Lightweight Design Factor!

- Features a **NEW** one-piece compact body and low profile head
- Perfect for restricted access areas where normal torque wrenches can't fit

### Torque & Angle Combo Mode

- The most accurate and fastest way to achieve torque plus angle in a single motion
- **IMPROVED** Torque accuracy:
  - +/-4% CW +/-6% CCW (5 to 19% of full scale)
  - +/-2% CW +/-3% CCW (20 to 100% of full scale)
- Angle range 0 - 360°



All Snap-on® Torque Wrenches, Drivers and Testers are provided with a Certificate of Calibration (unless otherwise indicated). All wrenches and drivers are calibrated per ASME® and ISO® Standards for Accuracy, from 20% to 100% of full scale, using NIST® traceable equipment.

**Snap-on Industrial**

**THERE IS A DIFFERENCE**



Bluetooth Low Energy

# BLUETOOTH® CONVENIENCE COMES TO CONTROLTECH™

NEW ControlTech™

## Bluetooth® Wireless Electronic Torque Wrenches

NOW WITH BLUETOOTH LOW ENERGY  
WIRELESS CAPABILITY

- Real time information with data logging
- Each wrench displays multiple torque units and angle



- technology, cycle counter, battery level indicator and more
- Precise multi-axis gyroscope and unique algorithm provides automatic flex compensation
- Meets or exceeds ISO 6789 standard
- Improved Torque accuracy:
  - +/-4% CW +/-6% CCW (5 to 19% of full scale)
  - +/-2% CW +/-3% CCW (20 to 100% of full scale)
- Rugged all-steel body is designed for industrial use (aluminum handle for 1,200 in-lb models)
- Two year warranty
- Angle range 0 - 360°

### MULTIPLE TORQUE INDICATORS

with configurable settings provide operational guidance. Click-type torque wrenches stop pulling the wrench the instant it clicks. Electronic wrenches feature green/red lights, plus vibration and audible beeping that tell the user when targeted torque is within range, achieved or over torqued.

**Torque & Angle Combo Mode** The most accurate and fastest way to achieve torque plus angle in a single motion

### WIDE SELECTION OF INTERCHANGEABLE HEADS AVAILABLE

J-Shank, Y-Shank, X-Shank, Z-Shank & ISO/IZO

Contact your Snap-on Industrial Representative for details.

## NEW Connectorq App

- QR and barcode scanning available for quick job mode set ups
- Quality control management with lock out functions
- IOS, Windows and Android compatible



### DOWNLOAD CONNECTORQ NOW

in the App Store, Google Play or Microsoft Store and sync to the tool to take readings, diagnose and then store and share results on your existing mobile device.



# GET THE CONNECTORQ APP FOR YOUR MOBILE DEVICE



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**NEW  
PRODUCT**



ISO/ISO	CTECHW1300AS	Interchangeable	150-3,000	12.5-250	17-340	ISO/ISO	CTECHW1300S	Interchangeable	150-3,000	12.5-250	17-340
1/2"	CTECHW1300AS	Fixed Ratchet	150-3,000	12.5-250	17-340	3/8"	CTECHW2000S	Fixed Ratchet	12-240	1-20	1.36-27.12

ISO/ISO	CTECHW1300AS	Interchangeable	150-3,000	12.5-250	17-340
1/2"	CTECHW1300AS	Fixed Ratchet	150-3,000	12.5-250	17-340
3/8"	CTECHW2000AS	Fixed Ratchet	12-240	1-20	1.36-27.12

ISO/ISO	CTECHW1300S	Interchangeable	150-3,000	12.5-250	17-340
1/2"	CTECHW1300S	Interchangeable	150-3,000	12.5-250	17-340
3/8"	CTECHW2000S	Fixed Ratchet	12-240	1-20	1.36-27.12

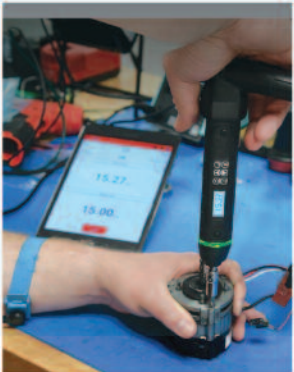
**NEW**

- and angle readings
- Accuracy:  $\pm 4\%$  CW and  $\pm 6\%$  CCW at 5 to 19% of full scale and  $\pm 2\%$  CW and  $\pm 3\%$  CCW at 20 to 100% of full scale

**4 MODELS AVAILABLE**

**4-80 in.-lbs. Torque Range**  
CTECHWMS80FS (Female)  
CTECHWMS80MS (Male)

**5-100 in.-oz. Torque Range**  
CTECHWMS100FS (Female)  
CTECHWMS100MS (Male)



CTECHWMS80MS

CTECHWMS80FS



**Multi-Sensory Indicators**

The easy-to-read, backlit LCD screen, LED indicator lights, audible beep and handle vibration work together to signal when torque is within the targeted range



## CREATE A WIRELESS DIGITAL TORQUE WRENCH NETWORK



CTLNKCTRL

### ControlTech™ Link System

WIRELESS CONNECTIVITY FOR REAL TIME PROCESS CONTROLS

**Controller**  
CTLNKCTRL

**Barcode Scanner Manager**  
CTLNKBCSM

**External I/O Module**  
CTLNKEXTIOM

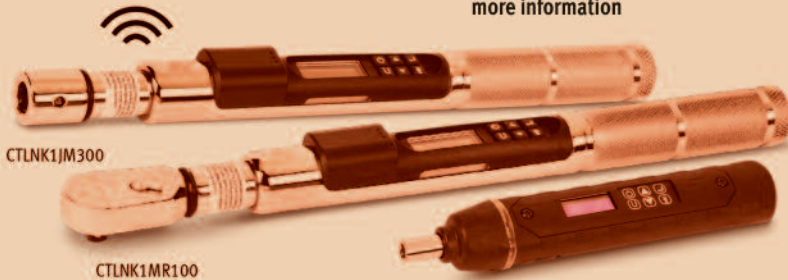
**ControlTech™ Link Host Software**  
CTLNKHOST

**Internal I/O Cable**  
CTLNKINTIOC

- Wirelessly link to plant level manufacturing execution systems (MES) through Snap-on's new, cutting-edge controller
- Provides real time process controls for multiple operators and documents every torque event; eliminating redundant operations, mistakes, rework, and

reducing warranty costs

- Can also be configured as a standalone data collection system, or control system
- **Contact your sales representative for more information**



CTLNK1JM300

CTLNK1MR100

CTLNKMS80F

### ROBUST AND RELIABLE DATA TRANSFER

ControlTech-Link wrenches are powered by ZigBee® wireless communication technology for receiving instruction and transmitting job data to the controller unit.

ZigBee is a global, standards-based wireless solution that connects devices in industrial, communications, residential, and other critical environments.



ZigBee



### DURABILITY

The rugged, all-steel body is designed to stand-up to industrial use and each Snap-on ControlTech-Link Digital Torque Wrench is backed by an industry-leading 2 year warranty.

Drive Size	Model	Range (In-lb)	Range (ft-lb)	Range (N-m)
1/4"	CTLNK1MR100	5-100	0.4-8.3	0.6-11.3
3/8"	CTLNK2MR100	5-100	0.4-8.3	0.6-11.3
1/4"	CTLNK1MR240	12-240	1-20	1.4-27.2
3/8"	CTLNK2MR240	12-240	1-20	1.4-27.2
J (0.425")	CTLNK1JM300	15-300	1.25-25	1.7-34
3/8"	CTLNK2MR1200	60-1200	5-100	6.8-135.6
Y (0.560")	CTLNK4Z800	360-7,200	30-600	40.7-813.5

### ControlTech™ Link Micro Electronic Torque Wrenches

Drive Size	Model*	Range (In-lb)	Range (ft-lb)	Range (N-m)
1/4"	CTLNK1MR100	5-100	0.4-8.3	0.6-11.3
3/8"	CTLNK2MR100	5-100	0.4-8.3	0.6-11.3
1/4"	CTLNK1MR240	12-240	1-20	1.4-27.2
3/8"	CTLNK2MR240	12-240	1-20	1.4-27.2
J (0.425")	CTLNK1JM300	15-300	1.25-25	1.7-34
3/8"	CTLNK2MR1200	60-1200	5-100	6.8-135.6
Y (0.560")	CTLNKYM1200	60-1200	5-100	6.8-135.6

### ControlTech™ Link Micro Electronic Torque Screwdrivers

Drive Size	Model*	Range (In-lb)	Range (In-oz)
1/4 Hex	CTLNKMS100F	0.31-6.25	5-100
1/4 Square	CTLNKMS100M	0.31-6.25	5-100
1/4 Hex	CTLNKMS80F	4-80	64-1280
1/4 Square	CTLNKMS80M	4-80	64-1280



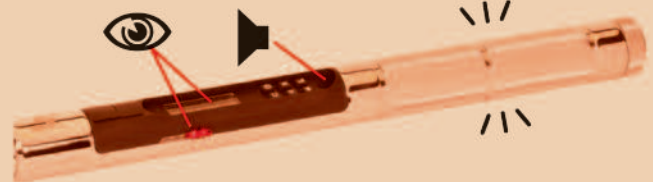
Approaching

Achieved

Over Torque

### LED INDICATOR LIGHTS

Dual, multi-colored side LED indicator lights with configurable settings provide operational guidance.



### MULTI-SENSORY INDICATORS

Ideal for any working condition thanks to audible, tactile and visual indicators. The easy-to-read LCD screen, LED indicator lights, audible beep and handle vibration work together to signal when torque is within the targeted range.

### DUAL 80° TECHNOLOGY

Provides precise yet strong ratchet function with minimal ratcheting arc and very little lost motion, allowing you to ratchet in tighter areas (refer to specification chart for applicable models).





## MES INTEGRATION

The Snap-on ControlTech-Link System can be linked to plant level manufacturing execution systems (MES) through Snap-on's new, cutting-edge controller. The Link system can also be configured as a standalone data collection system, or control system if integration with MES is not desired.

## TWO MODES OF OPERATION

### Report Mode

- The technician uses the wrench as they normally would, but data that is typically stored on the wrench's internal memory is transmitted to the controller, and then relayed to a database, if desired. This function provides automatic electronic signature and documentation for QA purposes.
- When in "Report" mode, the controller allows up to eight tools to report operator activity simultaneously.

### Control Mode

- The controller sends preset torque, angle and batch instructions to the wrench. The wrench becomes a "slave" to the controller and only allows the technician to carry out predetermined presets and jobs.
- When in "Control" mode, controller can be linked to as many as 16 torque wrenches, and control as many as 4 wrenches simultaneously.

## NETWORKING CAPABILITIES

The system can be integrated into a customer's automated network via multiple protocols or through 24 V I/O for PLC controlled systems. The controller is delivered with three protocols enabled: Ethernet IP, ACOP and ToolsNET.

## INDUSTRY-LEADING FEATURES

- The controller's color display can be used to program P-Sets, groups and jobs.
- Torque history can be viewed on the controller's screen.
- For standalone applications, the controller's onboard memory can store up to 10,000 torque events, which then can be saved to a database in CSV format and accessed via the optional Global Manager software.

## CONNECTIVITY

- The system's 2.4 GHz ZigBee® radio allows for long range (up to 100 meters, depending upon conditions) communication with low power consumption.
- Controllers can be connected in a daisy chain allowing for system expansion.
- Utilizes 12 radio channels; a scan feature automatically finds the best channel for the environment, ensuring optimal communication between the torque tools and controller.

## PROGRAMMABLE

- Extremely configurable allowing the customer to build their own process.
- Each controller can be programmed with up to 100 parameters, 100 groups of parameters and 100 jobs.
- Utility software (included with the controller) can be used to build torqueP-Set (a specific joint or a set of joints all having the same tightening specifications), groups (up to 4 operators each performing their own P-Set) and jobs (a series of steps, up to 35, consisting of P-Sets and or Groups organized in a specific predetermined order).
- The controller's programming screens can be accessed by password or by using a physical key to unlock the device.
- The controller has an advanced feature for scanning a customer's Part Number and/or VIN to determine what operation (P-Set, Group, or Job) is required.
- The controller can receive instructions in multiple ways: via serial input (from a computer or barcode scanner), TCP/IP messages via Ethernet connection and via 24 V I/O connection. Instructions can then be relayed to the worker through the linked wrench wirelessly via radio.



CONTROLLER  
LINKS TO  
**16** DIGITAL  
TORQUE  
WRENCHES

**ASK YOUR  
ACCOUNT  
MANAGER  
FOR A  
DEMONSTRATION  
ON ANY OF  
SNAP-ON'S  
TORQUE  
PRODUCTS**



# INTELLIGENT CORDLESS TORQUE

## 1" DRIVE HEAVY DUTY CORDLESS TORQUE MULTIPLIERS

Specifically designed to improve performance and data traceability in safety critical and heavy industrial operations, the CTM is perfectly suited for all applications where conventional electric or pneumatic power is not available or simply in situations where the removal of hoses and cables is highly desirable for workplace safety

### POWERFUL DUAL-SPEED TORQUE

CTM1000 (250-1,000 ft. lbs.)

CTM2000 (500-2,000 ft. lbs.)

CTM3000 (750-3,000 ft. lbs.)

### ACCURATE RESULTS

CTM is a transducer controlled battery powered torque tool designed for accurately applying torque to threaded fasteners. The unique 'intelligent joint sensing' technology continually measures the joint during tightening and when necessary, employs dynamic braking to avoid torque over-shoot due to motor inertia, consistently achieving highly accurate results of  $\pm 3\%$  of setting.

### SAFETY

The CTM 'safe to start' button (which needs to be pressed at the same time as the trigger), ensures hands are safely positioned at start up. Once the tool is running, the operator can relocate their hand securely to the supplied secondary handle.

### OVERHEAT-PREVENTION

Most torque tool users want to know how many tightening cycles the tool will perform from a battery, but the more relevant question usually is, how many cycles will the tool perform before it overheats? The new CTM is designed to offer outstanding performance while minimizing the traditional overheating problem of battery-operated tools. In short, under the same conditions the CTM will keep working when most competitors have to be stopped to cool.

### TWO-WAY COMMUNICATION

The CTM allows two-way communication via Bluetooth or USB cable, downloading up to 3,000 time and date stamped readings or live streaming data from the tool. It is also possible to upload information to the tool, such as tightening sequences. To manage this data, tools are supplied with a complimentary software. As an added benefit, data can be output in CSV format to communicate directly with customers' own data management systems. In addition, the CTM can communicate with smart devices, such as mobile phones and tablets, which enables the ability to gather tightening data specific to a known set of GPS coordinates. When working in safety critical applications, such as railway infrastructure, this enables the CTM to provide invaluable traceability data.

### AUDIT MODE

The new CTM is also equipped with an 'Audit Mode', which offers the ability to perform a check on pre-tightened bolts. Most electric tools if applied to a tight bolt will further tighten it. So, even if the bolt was fastened correctly, the test will destroy the original tightening integrity. Under 'Audit Mode' the CTM will run at a speed that allows it to stop almost instantaneously once the set torque is achieved. If a bolt is found to be loose then the tool will tighten it to the desired level, recording the angle of turn required to do so.

**PRECISE  
TORQUE**

$\pm 3\%$   
Accurate



'Safe to start' button ensures hands are safely positioned at start up

Key Lock Feature prevents unauthorized usage

**USB**

USB and Bluetooth® 4.0 Data Transfer plus Software for data management (see next page for details)

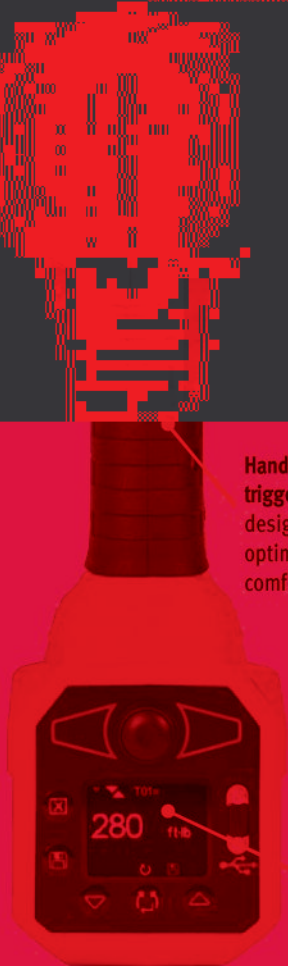
**CORDLESS  
CONVENIENCE**

### DID YOU KNOW?

The CTM Wrenches offer untethered access (no power cable or hose to tangle and get in your way) improving safety, convenience and versatility.



## THE MOST VERSATILE MULTI-METER



Handle and trigger designed for optimum comfort



Robust steel reaction supplied as standard

Box Design is reliable and proven over more than a decade

High powered LED to illuminate application



18V, 5.0Ah Battery and efficient motor give outstanding fastening performance per charge

OLED Display ensures visibility in all conditions

### USER-SPECIFIC FUNCTIONALITY

- 12 user IDs can be downloaded to the tool and results can be stored against individual users
- 20 unique stand-alone targets plus 20 unique work group targets for each work group
- Maximum Audit Mode target angle (720°)

### DATA DRIVER

- Display and on-board storage of final torque or torque and angle values
- Save up to 3,000 time and date stamped readings
- Results can be output in CSV (comma-separated values) format for users not able to use included software
- Ability to produce and store real time graphs via included software
- Usage counter gives the ability to see the amount of times the tool has been used since the last reset
- Allows tool integration into third party control systems

### PRECISE OPERATION

- Turn Angle option can be used to check if bolts have already been tightened in an assembly process

### INTELLIGENT TOOL CONNECTIVITY

CTM comes supplied as standard with complimentary PC software for data management and tool configuration. CTM also offers great flexibility in connection possibilities as it can be interfaced with third party production control software.



## DATA-DRIVEN RESULTS



Produce and store real time graphs

Send 'Log Results' in real time

Output Results in CSV Format for users not able to use included software

Stock No.	Drive Size	Torque Range		Tool Weight lbs. (kg)	Reaction Weight lbs. (kg)	Max Output Speed (RPM)
		ft. lbs.	Nm			
CTM1000	1"	250-1,000	200-1,350	13.67 (6.2)	3.09 (1.4)	32
CTM2000	1"	500-2,000	400-2,700	14.33 (6.5)	3.09 (1.4)	13
CTM3000	1"	750-3,000	800-4,000	18.74 (8.5)	5.51 (2.5)	9.5



# MORE IN THE TORQUE FAMILY

## MTM Series Torque Multipliers

Torque multipliers are ideal for use in the Oil & Gas, Mining, Railroad, Heavy Fleet, Power Gen and Aviation industries. They are calibrated to give exact multiplication ratio and have a guaranteed accuracy of +/-4%. Their compact dimensions allow excellent access and easy handling in any environment. Robust construction means minimal maintenance and long life in demanding work environments. Compact carrying case included and a variety of optional reaction fixtures available separately.

Use of torque multipliers are essential when high torque is needed and are ideal in heavy industries. Multiple reaction fixtures available for true torque multiplication.

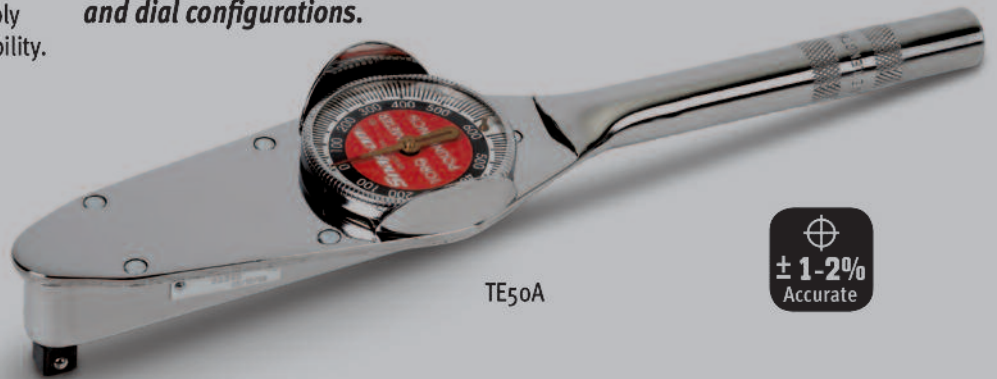


± 4%  
Accurate

## TORQOMETER® Torque Wrenches

Dial torque wrenches allow the user to easily apply and monitor torque with high accuracy and reliability. With a wide selection of models to choose from (1/4"-1 1/2" drives) and multiple ranges, scales, and dial configurations, there is a dial wrench to cover nearly every need. A certificate of calibration is available if needed, plus, most dial-type torque wrenches include a rugged hard case for safe transport and storage

Dial Torque Wrenches allow the user to easily apply and monitor torque. Available in a wide selection of models, drive sizes, ranges, scales and dial configurations.



± 1-2%  
Accurate

## TQ Series Adjustable Click Type Torque Wrenches

The TQ Series use a 'split beam' measuring element providing accurate, reliable readings and eliminate the heavier coil springs used in conventional click-type wrenches.



Comfort Grip

± 4%  
Accurate

MULTIPLE COLORS AVAILABLE

## 1/2" or 3/8" Drive Digital Torque Testers

Accuracy is the most important aspect of any Torque Instrument. Digital torque testers give you fast, precise readings to help keep your torque instruments error-free.



CONVENIENTLY TEST TORQUE SETTINGS ON TORQUE WRENCHES PRIOR TO USE

CE

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