



Cumulus Hardware Compatibility Guide

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INTRODUCTION

The Cumulus Quality Execution System (Cumulus) is an integrated platform allowing sites to implement industrial workflows utilizing Cumulus Control Center, Cumulus WorkFlow™ and the Cumulus Mobile App. The Cumulus mobile app can connect to a suite of tools including software applications, torque wrenches, digital gauges, and hydraulic pumps.

Control Center

Control Center is a web application that provides industrial site monitoring and control capability to site supervisors, turn-around leads, maintenance leads, and quality inspectors. Control Center enables a site to build and maintain a digital connection register, capture work history, and ensure transparency of the industrial work process.

Mobile App

The mobile app provides traceable digital records for each workflow. The app guides the team on which operations and actions to perform. Data on the worker activities are captured and transmitted to the central cloud-hosted database.

This document provides guidance and information regarding the Bluetooth-enabled tools that integrate with Cumulus Platform. *The tools are not manufactured by Cumulus Digital Systems; thus, Cumulus Digital Systems makes no warranties about the use or maintenance regarding the equipment.*

Please consult manufacturer documentation for latest details for all equipment. Cumulus is not responsible for errors or omissions included in this documentation. It is for representation and comparison purposes only. Technical specifications change frequently and without notice from the manufacturer.

MANUAL TORQUING

Cumulus currently integrates for manual tightening with options from the following brands:

- [Snap-On CONTROLTECH](#)
- [Norbar Protronic Plus](#) -
- [Bahco Digital Torque Wrenches](#)
- [Chicago Pneumatic eTorque Electronic Torque Wrenches](#)

The wrenches are available in a variety of sizes and torque ranges. Optional features include Intrinsically Safe models, swappable heads, accessories, and attachments. For more information, please visit the relevant website or contact your local representative.

Bluetooth Digital Torque Wrenches

Snap-on CONTROLTECH™- Bluetooth Digital Torque Wrenches				
Model	DriveSize	Head Type	Range (ft-lb)	Range (Nm)
CTECHWY100AS	Y (0.560)	Interchangeable	5-100	6.8-135.6
CTECHWAN135AS	IZO/ISO (9 x 12 mm)	Interchangeable	5-99.6	6.8-135
CTECHW2R100AS	3/8"	Fixed Ratchet	5-100	6.8-135.6
CTECHW2F100AS	3/8"	Flex Head	5-100	6.8-135.6
CTECHW2F100B	3/8"	Flex Head w/Ingress Protection	5-100	6.8-135.6
CTECHW3F250AS	1/2"	Flex Head	12.5-250	16.9-339
CTECHW3R250AS	1/2"	Fixed Ratchet	12.5-250	16.9-339
CTECHW3R250B	1/2"	Fixed Ratchet w/Ingress Protection	12.5-250	16.9-339
CTECHWX250AS	X (0.735)	Interchangeable	12.5-250	16.9-339
CTECHWBN340AS	IZO/ISO (14 X 18 mm)	Interchangeable	12.5-250.8	17-340
CTECHW4R650AS	3/4"	Fixed Ratchet	24-479.5	32.5-650
CTECHWZN650AS	Z (0.560)	Interchangeable	24-479.5	32.5-650
CTECHW4R600AS	3/4"	Fixed Ratchet	30-600	40.7-813.5
CTECHWZ600AS	Z (0.560)	Interchangeable	30-600	40.7-813.5
Snap-on CONTROLTECH™- Bluetooth Digital Micro Torque Wrenches				
Model	DriveSize	Head Type	Range (ft-lb)	Range (Nm)
CTECHW1MR100S	1/4"	Fixed Ratchet	0.42-8.33	0.57-11.30
CTECHW2MR100S	3/8"	Fixed Ratchet	0.42-8.33	0.57-11.30
CTECHWANM30S	IZO/ISO (9 x 12 mm)	Interchangeable	1.11-22.13	1.5-30
CTECHWJM300S	J (0.425")	Interchangeable	1.25-25	1.7-34
CTECHW1MR240S	1/4"	Fixed Ratchet	1-20	1.36-27.12
CTECHW2MR240S	3/8"	Flex Head	1-20	1.36-27.12
CTECHW2M1200S	3/8"	Fixed Ratchet	5-100	6.8-135.6
CTECHW2F100B	3/8"	Flex Head w/Ingress Protection	5-100	6.8-135.6
CTECHWYM1200S	Y (0.560")	Interchangeable	5-100	6.8-135.6
CTECHWANM135S	IZO/ISO (9 x 12 mm)	Interchangeable	5-99.6	6.8-135

To jumpstart your projects, Cumulus has limited inventory of the bolded models available for purchase directly from Cumulus (CTECHW4R650AS, CTECHW3F250AS, CTECHW2M1200S, CTECHW2MR240S).

Snap-on CONTROLTECH™- IS/EX Bluetooth Digital Torque Wrenches				
Model	DriveSize	Head Type	Range (ft-lb)	Range (Nm)
CTECHW1UA135	IZO/ISO (9 x 12 mm)	Interchangeable	5 to 99.6	6.8 to 135
CTECHW1UB400	IZO/ISO (14 X 18 mm)	Interchangeable	14.8 to 295	20 to 400
CTECHW1UR650	3/4"	Fixed Ratchet	24 to 479.4	32.5 to 650

Norbar Protronic Plus Bluetooth Digital Torque Wrenches				
Model	DriveSize	Head Type	Range (ft-lb)	Range (Nm)
130512	3/8"	Fixed Ratchet	3.7 to 73.5	5 to 100
130513	1/2"	Fixed Ratchet	3.7 to 73.5	5 to 100
130514	1/2"	Fixed Ratchet	7.4 to 147.5	10 to 200
130515	1/2"	Fixed Ratchet	12.6 to 250.7	17 to 340
130516	3/4"	Fixed Ratchet	29.5 to 590	40 to 800

Bahco DIGITAL TORQUE WRENCHES				
Model	DriveSize	Head Type	Range (ft-lb)	Range (Nm)
TAWMB930M	9x12 ISO Shank	Interchangeable	1.11 to 22.13	1.50 to 30
TAWMB9135M	9x12 ISO Shank	Interchangeable	5 to 99.5	6.8 to 135
TAWMB14340	14x18 ISO Shank	Interchangeable	12.5 to 250.8	17 to 340
TAWMB24650	24x32 ISO Shank	Interchangeable	24 to 479.4	32.5 to 650
TAWMB24800	24x32 ISO Shank	Interchangeable	29.5 to 590	40 to 800

Chicago Pnuematic eTorque TORQUE WRENCHES				
Model	DriveSize	Head Type	Range (ft-lb)	Range (Nm)
CP8916TC / 8941089161	1/2"	Interchangeable	15 to 147.5	20 to 200
CP8918TC / 8941089181	1/2"	Interchangeable	25 to 250	34 to 340

Bluetooth Digital Torque Screwdrivers

Snapon CONTROLTECH™ MICRO-BLE DIGITAL TORQUE SCREWDRIVER				
Model	DriveSize	Head Type	Range (in-lb)	Range (Nm)
CTECHWMS80F	1/4" Hex	Interchangeable	4 to 80	0.45 to 9
CTECHWMS80M	1/4" Sq. Drive	Interchangeable	4 to 80	0.45 to 9

Norbar ProTronic Plus 9 Digital Torque Screwdriver				
Model	DriveSize	Head Type	Range (in-lb)	Range (Nm)
130524	1/4" Female Hex	Interchangeable	4 to 80	0.45 to 9

Bahco Digital Torque Screwdriver				
Model	DriveSize	Head Type	Range (in-lb)	Range (Nm)
TASMB14H09	1/4" Female Hex	Interchangeable	4 to 80	0.45 to 9

To jumpstart your projects, Cumulus has limited inventory of the bolded models available for purchase directly from Cumulus (CTECHWMS80M).

Snap-on Accessories for Snapon Intrinsically Safe Wrenches

CTECHW1UA135

- Replacement 3/8in ratchet head for [CTECH](#) 135Nm: [IZFRAT9X12](#)
- Replacement 1/2in ratchet head for [CTECH](#) 135Nm: [IZSRAT9X12](#)
- Ring Inserts - Sizes available [here](#) - select only 9 X 12 ISO/IZO heads
- Open-End Inserts - Sizes available [here](#) - select only 9 X 12 ISO/IZO heads

CTECHW1UB400

- Replacement 1/2in ratchet head for CTECH 400 Nm: [IZSRAT14X18](#)
- Replacement 3/4in ratchet head for CTECH 400 Nm: [IZLRAT14X18](#)
- Ring Inserts - Sizes available [here](#) - select only 14 X 18 ISO/IZO heads
- Open End Insert - Sizes available [here](#) - select only 14 X 18 ISO/IZO heads

DIGITAL PRESSURE GAUGES

The digital pressure gauges can be connected to most commercially available hydraulic pumps (electric or pneumatic driven). Cumulus currently interfaces with the following devices for hydraulic torquing, tensioning and pressure testing:

- WIKA CPG1500
- ADDITEL 680A, 681A, 685

WIKA CPG1500

The [CPG1500](#) has the following characteristics:

- Available in measuring ranges up to 150,00psi (10,000 bar)
- Accuracy: up to 0.025 % (standard .1 %)
- Intrinsically safe version available
- Available in multiple thread connection types



Additel 680A, 681A, 685

The [685](#) has the following characteristics:

- Available in measuring ranges up to 60,000 psi (4,200 bar)
- Accuracy: 0.02%, 0.05%FS or 0.1%RD
- Intrinsically safe version available
- Available in multiple thread connection types
- **Data logging (optional)**



The [680A](#) has the following characteristics:

- Available in measuring ranges up to 60,000 psi (4,200 bar)
- Accuracy: 0.1% or 0.2%FS
- Intrinsically safe version available
- Available in multiple thread connection types
- Data logging included



The [681A](#) has the following characteristics:

- Available in measuring ranges up to 60,000 psi (4,200 bar)
- Accuracy 0.02% or 0.05% FS accuracy
- Intrinsically safe version available
- Available in multiple thread connection types
- Data logging included



Note: For digital Pressure Testing, the data logger option is highly recommended.

HYDRAULIC WRENCHES / PUMPS

Cumulus supports most commercially available hydraulic wrenches and pumps as the digital pressure gauges (highlighted above) interact with the Cumulus Mobile App. Therefore, it is only necessary to obtain the respective pressure gauge with the proper threading/adaptor to connect to the pump itself. Hydraulic wrenches and pumps do not need modification. Brands we commonly integrate with include:

The Snap-on logo features the brand name in a bold, italicized, red sans-serif font with a registered trademark symbol.The Atlas Copco logo consists of the brand name in a blue serif font, centered between two horizontal blue bars.The SPX logo is rendered in a bold, grey sans-serif font, with the letter 'X' colored green.The hydratight logo features the brand name in a bold, black sans-serif font, with a yellow horizontal bar underneath.The Hi-Force logo has 'Hi-Force' in a bold, black serif font, with 'HYDRAULIC TOOLS' in a smaller, red sans-serif font below it.The TRITORC logo is displayed in a bold, red sans-serif font.The torcUP logo features the brand name in a white, italicized sans-serif font on a black background with yellow diagonal stripes.The TORQLITE logo is in a bold, blue sans-serif font, with the 'Q' stylized to include a wrench icon.The ENERPAC logo is in a bold, black sans-serif font on a yellow background, with a small wrench icon to the right.The HYTORC logo is in a bold, black sans-serif font, with a red circle containing a white diagonal slash over the 'O'.

Additionally, Cumulus pre-loads the pressure/torque conversion charts for each specific make and model of the hydraulic wrenches to perform mathematical computations to derive and record the proper torque. Therefore, please verify Cumulus has setup the hydraulic wrench model, or submit a ticket to load the conversion chart for the wrench make and model. Cumulus will assist customers in loading the tool list (serial numbers, calibration dates) upon request. Please contact Support@cumulusds.com for more information.

ELECTRIC TORQUE TOOLS

Cumulus interfaces with three (3) brands of battery torque tools:

- Hytorc Lithium Series II (LST)
- Hytorc LION Gun and Lion Gun X
- Chicago Pneumatic CP 86
- Snapon CTM

The battery tools are available in a variety of sizes and torque ranges. Cumulus can help in selecting the proper models for your use case. For more information please visit the relevant website or contact your local representative.

Hytorc Lithium Series II

The [Lithium Series II](#) comes in five (5) models with varying torque ranges:

- LST-0700 (150 - 700 ft-lbs)
- LST-1200 (200 - 1200 ft-lbs)
- LST-2000 (325 - 2000 ft-lbs)
- LST-3000 (500 - 3000 ft-lbs)
- LST-5000 (800 - 5000 ft-lbs)



Hytorc LION Gun

The [LION GUN](#) comes in two (2) supported models with varying torque ranges:

- LIONGUN-.25-BSM (25 - 250 ft-lbs) -weight 7.3 lbs / 3.3 kg
- LIONGUN-.7-BSM (70 - 700 ft-lbs) -weight 8.2 lbs / 3.7 kg

Note: Ensure the proper model is -BSM. Non-Bluetooth LION Gun models are available.

The [LION GUN X](#) comes in two (2) supported models with varying torque ranges:

- LION GUN X 1000 (250 - 1000 ft-lbs) -weight 9.6 lbs / 4.4 kg
- LION GUN-X-3000 (600 - 300 ft-lbs) -weight 15.5 lbs / 7.0 kg



Snapon Cordless Torque Multiplier

The [Snapon MonsterLithium Cordless Torque Multiplier](#) (CTM) comes in six (6) models with varying torque ranges. For proper use, please ensure to purchase the applicable part number that includes BLE (Bluetooth Low Energy). The tool includes an 18V battery rather than a 36V battery.

- CTM550SSABT (100 ft-lb - 550 ft-lb)
- CTM800SSABT (160 ft-lb - 800 ft-lb)
- CTM600SS (118 ft-lb - 600 ft-lb)
- CTM1000 (250 ft-lb - 1000 ft-lb)
- CTM2000 (500 ft-lb - 2000 ft-lb)
- CTM3000 (750 ft-lb - 3000 ft-lb)



Chicago Pneumatic CP86 Series

The [CP86 Series](#) comes in six (6) models with varying torque ranges:

- CP8602C Part Number 6151570390 (50 - 240 ft-lbs)
- CP8609C Part Number 6151571130 (185 - 665 ft-lbs)
- CP8613C Part Number 6151570010 (220 - 960 ft-lbs)
- CP8626C Part Number 6151570040 (520 - 1910 ft-lbs)
- CP8641C Part Number 6151570070 (740 - 3020 ft-lbs)
- CP8681C Part Number 6151570190 (1470 - 5970 ft-lbs)

Note: Each model comes in four (4) versions: Standalone, C - Connected, CQ - Connected Quality TC - Torque Check. The Standalone version does not have the required Bluetooth connectivity. *The C, CQ or TC versions are all compatible. Only the C (connected) version is listed above.*



ELECTRICAL TESTING

Cumulus supports insulation resistance (IR) testing with the “advanced” line of [Megger](#) Bluetooth insulation resistance testers.

- MIT525/2 - 5kV version 2 - Mfg # 1016-086
- MIT1025/2 - 10kV version 2 - Mfg # 1016-096
- MIT1525/2 - 15kV version 2 - Mfg # 1016-101

Note: The previous generation of MIT devices (version 1) do not support Bluetooth. Ensure you search and buy the “/2” version with the noted manufacturer catalog number above.

Megger sells through several authorized distribution partners including to but not limited to: Grainger, Transcat, TEquipment, Test Equipment Depot, Newark, Mitchell Instruments, JM Test.

Megger Inventory: <https://app.mectronic.com/stkchk/stck0b26ff87f52c97d3cebcad3f63b3d73e>



Cumulus supports low resistance testing with the [Megger](#) branded Ducter™ Ohmmeter 2A DLRO2X Mfg #1013-795.

Note: The base model DLRO2 does not support Bluetooth. Ensure you search and buy the “X” version with the noted manufacturer catalog number above.

Megger sells through several authorized distribution partners including to but not limited to: Grainger, Transcat, TEquipment, Test Equipment Depot, Newark, Mitchell Instruments, JM Test.

Megger Inventory: <https://app.mectronic.com/stkchk/stck0b26ff87f52c97d3cebcad3f63b3d73e>



DEVICE OVERVIEW

Cumulus mobile app is available on both the Apple iOS and Google Android operating systems. As such, the application can run on most devices available in both the phone and tablet formats. The following devices are recommended by Cumulus and are meant as a guide. If you have an alternate device, please contact Support@cumulusds.com to determine compatibility.

As of the date on this document:

- For Android, minimum supported version Android 12.1.
- For IOS, minimum supported version is 15.

Each device has pros and cons which should be carefully considered including EX options, NFC options, battery life and operating temperatures.

<u>Brand</u>	<u>Model</u>	<u>LTE</u>	<u>Screen Size</u>	<u>Battery</u>	<u>Operating Temperature</u>
Apple	iPad	Yes	Multiple	8827mAh	0 C - 35 C
i.safe MOBILE	IS930.1	Yes	8"	8400mAh	-20 C - 60 C
i.safe MOBILE	IS930.2	Yes	8"	8400mAh	-20 C - 60 C
eCom	Tab-Ex 03 DZ2	Yes	8"	5050mAh	-20 C - 55 C
Sonim	XP8	Yes	5"	4900mAh	-20 C - 55 C
Samsung	Tab Active3	Yes	8"	5050mA	0 C - 35 C

<u>Brand</u>	<u>Model</u>	<u>ATEX Zone 1</u>	<u>ATEX Zone 2</u>	<u>IP67</u>	<u>MIL-STD 810H</u>	<u>Comments</u>
Apple	iPad	No	No	No	No	Case options available noted below.
i.safe MOBILE	IS930.1	Yes	No	Yes	Contact Vendor	ATEX Zone 1
i.safe MOBILE	IS930.2	No	Yes	Yes	Contact Vendor	ATEX Zone 2
eCom	Tab-Ex 03 DZ2	No	Yes	No	Yes	ATEX Zone 2
Sonim	XP8	No	Yes	Yes	Yes	ATEX Zone 2 EX smart phone tablet.
Samsung	Tab Active3	No	No	No	Yes	Rugged only - no IS/EX

RECOMMENDED ANDROID DEVICES

The following Android devices are recommended by Cumulus for use with mobile app.

Tab-Ex 03 DZ2

The [Tab-Ex 03 DZ2](#) has the following characteristics:

- OPERATING SYSTEM Android
- PROCESSOR: Exynos 9810 (Lhotse) Octa-Core 64-Bit; 4 x 2.7 GHz, 4 x 1.7 GHz
- MEMORY RAM: 4 GB, Internal data memory: 64 GB
- DISPLAY: 8" WUXGA, 1920 x 1200 pixels
- ENVIRONMENT TEMPERATURE: -20 °C to +55 °C
- PROTECTION: IP64; MIL-STD-810H
- CONNECTIVITY: Wi-Fi 802.11 a/b/g/n/ac/ax (2.4GHz + 5GHz), 2x2 MIMO
- SIM 1 x Nano SIM
- Bluetooth® v5.0
- Battery: 5050 mAh (Typical); Runtime of up to 11 hours



iSafe IS930 INTRINSICALLY SAFE Tablet

The [IS 930.1](#) and [IS 930.2](#) are the same tablet except for the EX zone rating and the cost of the devices. The tablets have the following characteristics:

- IS930.1 is the Zone 1 rated version of the tablet.
- IS930.2 is the Zone 2 rated version of the tablet.
- Operating System: Android
- Bluetooth® 5
- Long battery lifetime (8400 mAh)
- LTE & Near Field Communication (NFC) & Wi-Fi IEEE 802.11 b/g/n
- Bright 8" HVGA display & Dust- and waterproof (IP68)
- 13 MP rear camera and 5 MP front camera
- Operating ambient temperature: -20 to 60° C (-4 to 140° F)

IS 930.1



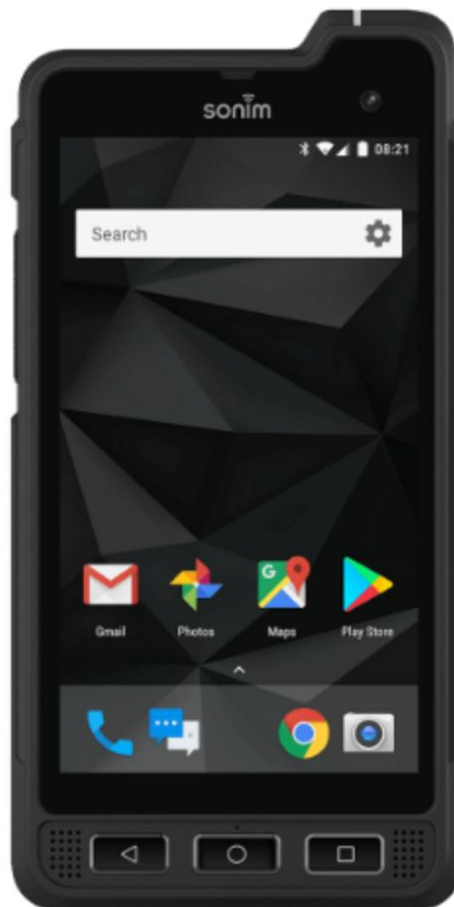
IS 930.2



Sonim XP8 - IS Smartphone

The [Sonim XP8](#) is an LTE smart phone and the following characteristics:

- Android
- Wi-Fi 802.11 a/b/g/n/ac/r & LTE + NFC
- Bluetooth 5.0 with BLE
- Battery 4900 mAh Li-Ion, Removable
- Rugged Certifications (non-IS)
 - Intrinsically safe Class 1 Div 2, Groups A, B, C, D
 - Class II & III, Div 2, Groups F, G
 - MIL-STD-810G; IP-68 / IP-69
- 5.0" Gorilla Glass 3 Display
- Operating ambient temperature: -20 to 55°C (-4 to 131° F)



Samsung Tab Active3

The [Samsung Tab Active3](#) is a rugged military-grade design that gives you the confidence you need to take on any job no matter the conditions.

- Android
- Enhanced touch capability for use with gloves and in wet conditions
- MIL-STD 810H Drop Protection
- 4GB RAM, 64GB Storage Internal Memory
- 5,050 mAh Battery Type and Size - Removable
- Weight 426g
- Camera resolution (Front) 5.0 MP
- Camera resolution (Rear) 13.0 MP
- Wi-Fi 802.11 a/b/g/n/ac/ax 2.4G+5GHz, HE80, MIMO, 1024-QAM
- Bluetooth v5.0
- Main Display Resolution 1920 x 1200 @ 8.0" Main Display Size



RECOMMENDED IOS DEVICES

Apple iPad mini

The [Apple iPad mini](#) are available in a Wi-Fi or LTE version and the following characteristics:

- 7.9-inch (diagonal) LED-backlit Multi-Touch display (iPad Mini) or 10.2-inch (diagonal) LED-backlit Multi-Touch display with IPS technology (iPad 10.2)
- 8-megapixel camera
- Wi-Fi (802.11 a/b/g/n/ac); simultaneous dual band (2.4GHz and 5GHz) with LTE available
- Bluetooth 5.0 technology
- Built-in 19.1-watt-hour rechargeable lithium-polymer battery
- Operating ambient temperature: 0-35° C (32-95° F)



Apple iPad Cases

- [OtterBox Defender](#) (Rugged, non-IS rated) available
- [OtterBox Defender Series Division Series 2](#) (IS/EX) available
- Otterbox [handgrip](#) is available
- [XCIEL ATEX Zone 2](#) case
- [Otterbox for Energy](#): Hardline and Defender Division 2 models

TORQUE MULTIPLIERS

The manual tightening wrenches may also have their effective range increased by using a torque multiplier. Cumulus supports any 2:1, 3:1, 4:1, or 5:1 multiplier on the market. The following models manufactured by Snap-on represent some simple and effective torque multipliers. When using a torque multiplier, mobile app users must specify both the wrench and torque multiplier ratio, so the mobile app applies the correct multiplication factor to the required torque. Cumulus will automatically set the smart wrench torque value to ensure the required torque is applied to the nut through the multiplier.

- [Snap-on MTMB740](#)
 - 1/2" Square Input, 3/4" Square Output 740 ft-lb Bar Style Manual Torque Multiplier
 - Compact dimensions allow excellent access and easy handling
 - Maximum torque output of 740 ft-lb / 1,000 Nm
 - Supplied with two reaction styles for maximum versatility
 - Accuracy guaranteed better than $\pm 4\%$
- [Snap-on MTMB950](#)
 - 1/2" Square Input, 3/4" Square Output, 950 ft-lb Bar Style Manual Torque Multiplier
 - Compact dimensions allow excellent access and easy handling
 - Maximum torque output of 950 ft-lb / 1,300 Nm
 - Supplied with two reaction styles for maximum versatility
 - Accuracy guaranteed better than $\pm 4\%$
- [Snap-on MTMB1990](#)
 - 3/4" Square Input, 1" Square Output, 1,990 ft-lb Bar Style Manual Torque Multiplier
 - Compact dimensions allow excellent access and easy handling
 - Maximum torque output of 1,990 ft-lb / 2,700 Nm
 - Supplied with two reaction styles for maximum versatility
 - Accuracy guaranteed better than $\pm 4\%$
 - Supplied in a carrying case, which is ideal for heavy vehicle tool kits

DATA CENTER RECOMMENDED TOOLS

Cumulus supports multiple brands for Bluetooth connectivity to the Cumulus Mobile App. Each brand has multiple models of overlapping torque ranges and drive size. Cumulus has provided this short list of recommended tools for specific torque ranges and asset types. Cumulus will provide education, consulting and recommended alternatives for supported tools as requested.

Torque Range > 100 ft-lbs

This is a larger tool to be used for mechanical piping flanges with higher torque values than electrical related components. This torque range should cover #150 and #300 rated piping flanges.

- CTECHW3F250AS: <https://b2b.snapon.com/productDetails/954787/2/888277> (12 - 250 ft-lb)

Torque Range > 50 ft-lbs - Standard Form

This is a tool that provides proper leverage for open construction spaces. This torque range covers the following asset types for construction: PVC piping, automatic transfer switch (ATS), battery termination points, joint packs and busways, vienna arms, and panel transfer switches (PTX).

- CTECHW2F100AS: <https://b2b.snapon.com/productDetails/954805/2> (5 - 100 ft-lb)

Torque Range < 50 ft-lbs - Micro Form

These are smaller tools (micro wrenches) for easier access to tighter construction spaces. This torque range typically covers the following asset types for construction: manual tap off boxes (MTAP), manual transfer switch (MTS) components, coolant distribution units (CDU), row switch boards (RSB), busway plugs, expansion joint/arms and fixing clamps.

- CTECHW2M1200S: <https://b2b.snapon.com/productDetails/954783/2/888278> (5 - 100 ft-lb)
- CTECHW2MR240S: <https://b2b.snapon.com/productDetails/954792/2/888278> (1 - 20 ft-lb)

Electrical Termination Points

These are screwdrivers to be used to tighten termination or connection points. This torque range typically covers the following asset types for construction:

- CTECHWMS80FS (female): <https://b2b.snapon.com/productDetails/954801/2/888259>
- CTECHWMS80MS (male): <https://b2b.snapon.com/productDetails/954782/2>

Each component manufacturer may have different torquing specifications, please consult specific torque values for each asset type being used at your facility/site.