QX Series Cordless Precision Tools
FAQs

1. What tool configurations and torques are available?

Pistol Screwdrivers:

There are 3 different models of pistol screwdrivers; a 0.8 - 4 Nm tool at 1500 RPM, a 1.6 - 8 Nm tool at 1150 RPM, a 2.4 - 12 mm tool at 750 RPM; 3.6 – 18Nm at 500 RPM.

Right Angle Wrench:
There are 4 different models of the angle wrench: 1.0 – 5Nm tool at 1213 RPM, 2.0 – 10Nm tool at 936 RPM, 3.0 – 15 mm tall at 600 RPM and 3.6 – 18Nm tool at 500 RPM.

2. What drives, spindle options are available?

Drive options include 1/4" Quick Change, and 1/4" and 3/8" Square drives for both pistol and angle.

3. Is the speed programmable?

Yes. You can program a variable speed profile on the tool down to 10% of the free speed. This comes standard with the tool and no additional hardware must be purchased to achieve this functionality.

4. How accurate is the tool?

All QX Series tools contain torque transducers traceable to the National Institute of Standards, and provide for full closed-loop control. The expected accuracy of the tool will depend on both the tool setting and the application. Each tool is tested before leaving our factory and comes with a calibration certificate showing the results of a 30 run capability test on a 50 degree hard and 175 degree soft joint at maximum tool torque. Accuracies will vary but can be expected to be single digits for many common applications.

5. What fastening strategies are available?

There are three different fastening strategies available on this tool; torque control with angle monitoring, angle control with torque monitoring and prevailing torque control. Prevailing torque control allows the tool to handle applications that mechanical clutches normally cannot where the final target torque is less than the maximum rundown torque.

6. What batteries are used with the tools?

There are 2 battery options available in the new IQ$_{V20}$ Series Lithium-ion battery platform for use with the QX Series tools. The first is a compact 20V 1.5 Ahr battery, and the second is a 20V 3.0 Ahr battery for extended use. This gives you the option to choose the size of battery that matches your needs.

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7. How long will the battery last?

The actual number of cycles per charge will vary depending on a number of factors , including the tool, application, operating conditions and the choice of battery. While results will vary, a general estimate is that a 1.5 Ahr battery will deliver 1,000 cycles per charge while a 3.0 Ahr battery will deliver 2,000 cycles per charge. Similarly, the number of battery recharges can vary, but a general estimate is that a battery can be recharged 1,000 times before needing replaced.

8. Will the tool attempt a cycle without enough battery power to complete it?

No. The user is given an initial warning when the battery voltage begins to drop. Then when the battery voltage reaches a preset low voltage limit after a cycle complete, it will not attempt another cycle until the battery is replaced.

9. How many cycles should I expect from the tool?
The number of total cycles will vary based on the particular model and application. Lab test results have shown durability greater than 1 million cycles.

10. Does the QX Series have a headlight?

Yes, all pistol models have programmable headlights that can be set to timeout at any desired time using the ICS software. They also turn on with only a half pull of the trigger.

11. How much End of Run data can be stored?

The tool will hold 1200 runs. ICS software can also hold 1200 cycles worth of data at a time. If you archive the data you can save it to a server and have unlimited storage. You can also export the data to .PDF or .CSV file.

12. Where are the tools made?

The QX Series tools are assembled and tested with state-of-the-art equipment in a climate-controlled area in Ingersoll Rand's Southern Pines, North Carolina facility.

13. How many configurations can be programmed?

Eight configurations can be programmed.

14. Can the display and keypad be password protected?

Yes

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15. How do you program the tool?

The tool can be programmed using 3 methods: 1.) Using the tool's Display Module, 2.) Using ICS software and a USB cable connection to the tool, 3.) Using ICS software and a wireless Process Communication Module (PCM). One configuration can be programmed using the tool's Display Module, 8 configurations can be programmed via ICS software using either a USB cable or wireless PCM to connect to the tool.

16. What types of controllers are needed with the QX Series?

The QX Series DOES NOT need a costly external controller! The onboard control eliminates the need for an external controller. This gives you the feature set of a transducerized tool at a fraction of the price of many competitive systems. If you want to connect to your tool wirelessly, then you can use the optional Process Communication Module (PCM) with a wireless tool.

17. How do I get ICS Software?

ICS-Connect software can be downloaded free from the QX Series product webpage or can be ordered (84737-COMM-KIT). This kit contains ICS-Connect software and a USB connection cable.

18. What connection cables are used to program or download data from the QX Series?

The QXC Series tools use a USB to Micro USB cable to interface with a computer running ICS software. The QXX Series tools can either use the USB to Micro USB cable or they can communicate wirelessly via a PCM.

19. What languages does ICS Software support?

Chinese, English, French, German, Italian, Polish, Portuguese, Russian, Czech and Spanish.

20. What wireless technology is used by the QXX models?

The QXX uses the bottom two layers of the IEEE 802.15.4 Low Rate Wireless Personal Area Network (LR-WPAN) Standard. A tailored IR Application Protocol ensures minimal message latency while providing a fully hand-shaked protocol for transfer reliability. The IEE 802.15.4 protocol is ideal for securely handling short messages at the end of each fastening while using minimal power.

21. At what frequency does it operate?

The QXX uses the unlicensed 2.4GHz ISM (Industrial, Scientific and Medical) band. There are 15 channels (Channels 11-25) available with adjustable power levels.

22. Can I use a WiFi router to communicate with the QXX tool?

No. WiFi is the common name given to the IEEE 802.11b/g/n standard which operates in the same ISM band but uses different channel definitions and signal encoding. WiFi is great for large data transfers, office and always-on applications. It is not suited for low power consumption, rapid fire short messages and quick response on power up.

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23. How far away can a tool be from the PCM and still communicate reliably?

A good guideline is 30 meters (100ft). The channel power setting should be set to the lowest setting that still provides reliable transmission with expected obstructions.

24. Will a cell phone cause interference?

No. Cell phones work on a different frequency and technology.

25. Will the QXX interfere with the WiFi used in our plant for computer communications?

No, the power level is very low and the channel may be selected to one not used by the WiFi router in the area. IEEE 802.15.4 channels 15, 16, 20, and 21 fit in between the WiFi Channels 1, 6, and 11 (In Europe use IEEE 802.15.4 channels 15, 16, 21 and 22 which fit in between WiFi channels 1, 7 and 13).

26. What channel and power setting should I select?

WiFi installations predominantly use one or two of the three available channels. Any IEEE 802.15.4 channel in that space may be used. During installation the energy scan diagnostics may be used to reveal the quieter channels to choose from. Depending on the distance and obstructions, the power level should be reduced to the minimum level that still provides reliable communications.

27. If more than one PCM is installed, will the tools get confused?

No. During installation one or more tools are associated with one particular PCM by its channel and PAN ID.

28. If more than 1 tool is trying to talk to the PCM at the same time, will one message be lost?

No. The tool software is designed for collision avoidance and will send data only when no other tool is transmitting. If tool messages are sent at the same time, the radio firmware buffers the messages. With "EOR retries" turned on; all messages are acknowledged and will be repeated if no confirmation of receipt is received.

29. How many tools can be connected to a PCM?

Up to 10 tools can be connected to one PCM for data collection and configuration programming. A 1-to-1 pairing is used for process control using the 8 I/O channels

What happens when I change batteries on a wireless tool during production?

You will lose communications while the battery is not connected to the tool but communications will resume automatically when battery is replaced, using the same PAN ID, channel and power level that was previously used before the interruption.

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31. What happens to the EOR data if I am working in an area shielded from wireless communications or temporarily out of PCM range?

The tool is capable of storing 1,200 End-of-Run (EOR) records internally in the event of communication loss between the tool and the PCM. Once the communication resumes, the tool will transfer the entire backlog to the PCM.

32. Are there safety boots available for the tools?

Protective boots are available for both the Pistol tool and each Angle head. There is also a battery boot available.

33. Which tools come with an auxiliary handle?

All 12Nm Pistol tools come with an auxiliary handle. The handle (VP1-A48) can also be purchased as an accessory.

34. Is there a color identification tag accessory for the tools?

Colored tool Identification labels come with every tool to enable customized marking of torque, job, cell, calibration date or other useful information.

35. Does the QX Series tool use a brushless motor?

Yes. Because of this, there are no brushes to replace and there is no brush dust to worry about.

36. What key accessories can be offered for use with the QX Series?

Wireless Process Communication Module (PCM), Bit selector tray, Socket selector trays, torque testers, bits, sockets, balancers, hangers, and boots.

37. Do we offer Application Studies? What are the benefits?

Yes, there are 4 key benefits to conducting an Application Study on a customer's assembly with the equipment intended to be used in the application:
1. Check for any potential problems with the joint.
2. Develop an Optimal Tightening Strategy that meets the customer's expectations.
3. Develop Fault Detection Strategies to maximize the process's error-proofing capabilities.
4. Provide a valuable service to our customers while learning about their challenges.

38. Do we offer global support?

Yes. We have Solutions Centers covering all major markets of the world, in addition to our expansive network of capable distributors.