HYTORC

LITHIUM SERIES® II Electric Torque Tool
Basic Operations Manual

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ABOUT THIS DOCUMENT

ORIGINAL INSTRUCTIONS

This document applies to the LITHIUM SERIES® II Electric Torque Tools, model designations as follows;

Models: LST
Configurations: 0700, 1200, 2000, 3000, 5000, 8000
Option: U for USB Version if specified
Custom options: -zzzz if specified

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Product Modifications. HYTORC DOES NOT ALLOW any of the products listed in this manual to be modified by any end user without exception. Should an application require a modification to the tool, or any of the standard accessories please consult with your local HYTORC representative and they will be able to obtain the assistance for any modification that may be required.

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ABOUT THIS DOCUMENT (CONT'D.)

Warranty. The **LITHIUM SERIES® II** Electric Torque Tool has a one-year limited warranty. Every tool is tested before leaving the factory and is warranted to be free from defects in workmanship and materials. HYTORC will repair or replace, without charge, any tool which, upon examination, proves to be defective in workmanship or materials for one (1) year after the date of purchase. This warranty does not cover damage resulting from repairs made or attempted by unauthorized repair facilities. The repair and replacement remedies described herein are exclusive. In no event shall HYTORC be liable for any incidental, special, or consequential damages, including loss of profits. This warranty is exclusive and in lieu of all other warranties or conditions, written or oral, expressed or implied for merchantability or fitness for particular use or purpose. This warranty gives you specific legal rights. You may also have other rights that vary from state to state and province to province. In those states that do not allow the exclusion of implied warranties or limitation of incidental or consequential damages, the above limitations or exclusions may not apply to you. If you have questions about the warranty, contact our customer service center at 201-828-5270.

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ORIGINAL INSTRUCTIONS

WARNING Read all safety warnings, instructions, illustrations and specifications provided with this power tool.
Failure to follow all instructions listed below may result in electric shock, fire and/or injury.

Save all warnings and instructions for future reference.

TABLE OF CONTENTS

The **LITHIUM SERIES® II** Electric Torque Tool is the next generation electric torque tool with major advances resulting in greater durability, expanded functionality, and intuitive usability. The new brushless 36V DC motor has more than 5 times longer life than its predecessor. The tool incorporates TorcSense™ Technology which directly measures torque providing more repeatable results. Now standard with Bluetooth wireless technology makes data acquisition and firmware upgrades easier than ever. The tool is packaged in an all-aluminum housing that significantly improves durability for industrial applications. The user interface has been redesigned from the ground up to provide intuitive access to all software controlled bolting features through the high resolution display and push button control panel. Supplied with the same 36-volt battery system the tool provides sustained power through even the toughest jobs with capacity up to 5000 ft-lbs. This tool provides flexibility to support a variety of configurations including conventional sockets and reaction arms, the HYTORC Washer and precision mechanical tensioning with the HYTORC Nut.

CHARGE THE BATTERY

- The tool is supplied with the HYTORC Battery Charger (Model: A000791) and two long-life HYTORC 36-volt batteries (Model: P002036).
- Before charging a battery verify the local voltage supply to ensure capability with the charger; this will typically be 110 Volts or 220 Volts AC.
- Only operate the battery charger between 32°F (0°C) to 104° F (40° C) and with 10% to 90% ambient relative humidity (no condensate).
- Connect the charging cradle to the power supply.
- Connect the power cord to a grounded outlet.
- If necessary connect the plug adapters to the local power outlet.
- Insert the battery by sliding it into the charger and locking into place.
- The 36-volt battery is fully charged in approximately 90 minutes.

CHARGING/FAULT INDICATOR

- Flashes green while battery is charging.
- Shows continuous green when battery is charged.
- Flashes red to indicate fault/battery not charging.

BATTERY STORAGE

- Only store the battery and charger in the following environmental conditions:
- -4°F (-20°C) to 122°F (50°C) 5% to 95% ambient relative humidity.

TEST THE BATTERY

The Lithium-Ion battery has a long run life and will power the tool at full speed until the battery is depleted, so there is no gradual drop in power during use

- For continuous use, have one or more spare battery packs charging while the tool is in use. When needed, simply swap batteries from the charger to the tool.
- Batteries can be charged hundreds of times without any noticeable loss in capacity.
- Push the TEST button on the side of the battery and the LED's will provide an approximate indicator of remaining battery life.

1 LED ON	< 25% Battery Charge Left
2 LEDs ON	< 50% Battery Charge Left
3 LEDs ON	< 75% Battery Charge Left
4 LEDs ON	< 100% Battery Charge Left

INSTALL THE BATTERY

The battery easily slides onto the tool body and snaps into place

- Press the release button on the battery and slidebattery pack off the charger.
- Attach: Align the base of the tool with the rails inthe battery and slide the battery pack firmly intothe handle until you hear (or see) the lock snap inplace.
- Remove: Press the release button on the battery and firmly pull the battery pack out of the tool

NOTE: When not in use, remove the battery pack from the tool.

INSPECT TOOLS AND CALIBRATION

- Inspect all components. If damaged report any sign of damage and do not use the tool.
- Inspect the tool before each use. Repair or replace any obviously worn or damaged parts.
- Maintenance must be performed by aqualified technician.
- Modifying any of the components invalidates the warranty.
- Check the certificate or label on the tool for the most recent calibration date.
- HYTORC recommends all tools be tested and recalibrated periodically. More frequent calibration may be appropriate depending on local practice, usage and conditions.
- Customer/user is responsible for arranging testing and recalibration.
- Contact 800-FOR-HYTORC for assistance or further information.
- When not in use, store all tool components in the plastic storage case.
- Save all instructions and calibration reports in the storage case.

ENVIRONMENTAL CONSIDERATIONS

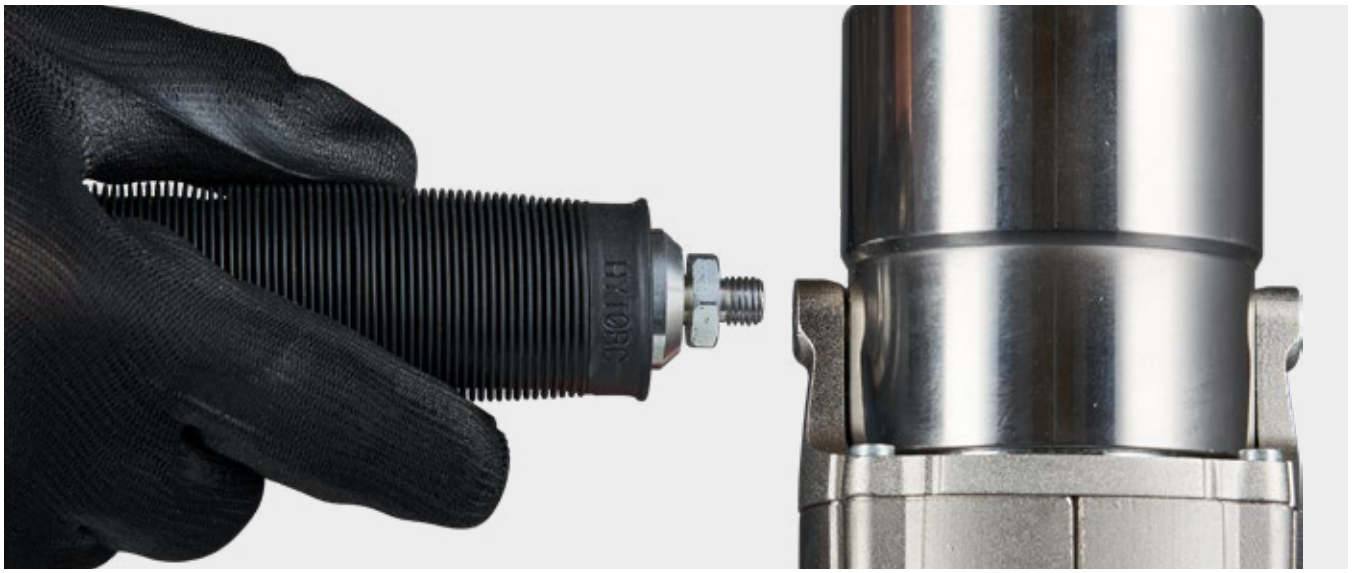
The LITHIUM SERIES II Electric Torque Tool is rugged industrial tool with an electric motor and electronic control. The following environmental considerations will help maintain reliable tool operation.

- The tool should not be exposed to moisture. Do not operate in rain, snow or extreme humidity.
- The operating temperature range of the tool and battery pack is – 4 °F (-20 °C) to 140 °F (60 °C).
- The ambient temperature range for tool and battery pack storage is – 4 °F (-20 °C) to 122 °F (50 °C).
- The ambient temperature range for the charging system during charging is 32 °F (0 °C) to 104 °F (40 °C).
- All Cooling Vents should be kept clear of dust, dirt and debris to allow internal fans to maintain airflow to keep the motor and electronics within temperature limits.
- Do not subject the tool to extremely dusty environments. Do not cover or obstruct vents during operation.
- The tool and electronic components are not certified or approved for explosive environments or areas containing combustible chemical materials.
- Secure the tool per local practice to protect from dropping.

SECURING THE TOOL

Follow local practices or standards for securing the tool from dropping. The eyelet provided fits most standard lanyards.

5. Install the Side Handle



The side handle screws into the bearing housing on either the right or left - hand tighten only.

A Work Light is available to enhance visibility, safety, and productivity. Work Light settings is available through the settings menu.

POWER ON

Push any button on the rear control panel to turn the tool on. The HYTORC logo is displayed for a few seconds while the unit powers up. When the tool is fully powered up the Home Screen will be displayed.

POWER OFF

From the Home Screen push and hold the center button for 3 seconds to turn the power off. The tool always saves current settings when powered off and returns to the same settings and access security level when the power is turned back on.

AUTO-OFF

The tool will automatically power off after 5 minutes of trigger inactivity to save the battery charge. The auto-off function can be enabled or disabled in the settings menu.

The torque value is displayed on the LCD screen along with Angle, Release, Fastener and Access Level. These paramaters may be adjusted through the menu system described in the Menu Guide. Only the torque value can be adjusted from the home screen.

INCREASE TORQUE

Push the left button corresponding to the up arrow ↑ to increase torque. The torque value will increase by increments of 1 ft-lb until reaching the maximum calibrated capability of the tool. Holding the button down increases the torque by increments of 10 ft-lb.

DECREASE TORQUE

Push the right button corresponding to the down arrow ↓ to decrease torque. The torque value will decrease by increments of 1 ft-lb until reaching the minimum calibrated capability of the tool. Holding the button down decreases the torque by increments of 10 ft-lb.

NOTE: Below the minimum calibrated value the tool will be set to Snug and can provide tightening at lower values as required.

CHANGE TORQUE UNITS

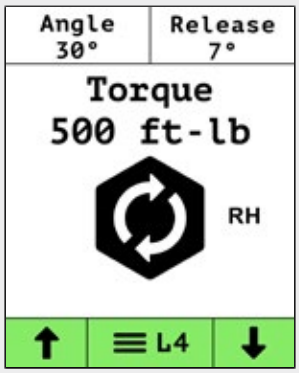
Torque units can be changed in the Settings menu to foot-pounds (ft-lbs), Newton-meters (N-m) or kilogram force meters (kgf-m). Refer to LST User Interface Guide for further information.

The tool drive rotates with either right hand (clockwise) or left hand (counter clockwise) operations. The tool is nominally set to right hand drive which is most common but can easily be switched to left hand drive.

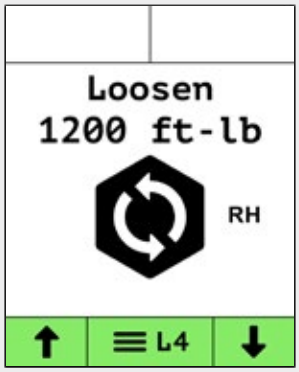
CHANGE DIRECTION

To change the drive direction, depress the direction sliding switch on the side of the tool and the screen will change to reflect the opposite direction. The directional rotational arrows at the center of the screen will also be reversed in direction.

Depress switch on right to tighten (Torque).



Depress switch on left to loosen.



The example shows the change in direction for right hand (RH) fasteners. The directional control switch automatically sets the appropriate direction for left hand fasteners, HYTORC Washers and for the HYTORC Nut as well.

LOOSEN

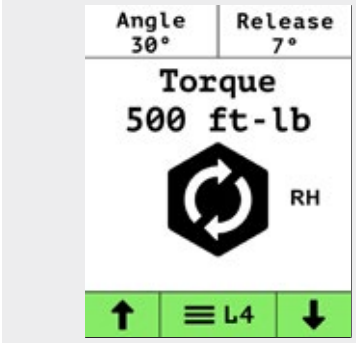
Changing direction sets the tool into the loosen mode with the torque value set to the maximum capability of the tool in order to quickly loosen or break out nuts. The loosen value can be decreased from the maximum torque value by pressing the right button corresponding to the down ↓ arrow. The loosen value can be adjusted to the desired value using the left and right buttons.

The tool provides two speeds; torque and rundown. The rundown speed increases the speed to the maximum output of the tool allowing the user to quickly run down the nut to prepare for a torqueing operation.

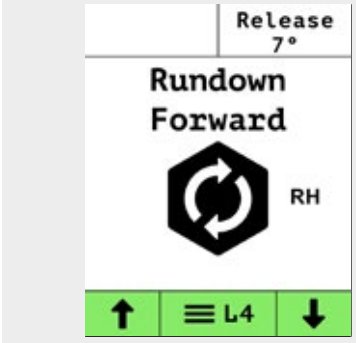
CHANGE TO RUNDOWN

Push the speed switch toward the rear of the tool to switch to rundown. At this speed the tool applies torque at the minimum capability of the tool or approximately 5% the maximum capability of the tool.

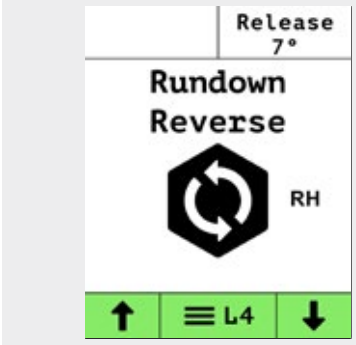
Push Switch forward for slow speed (Torque).



Push Switch to the rear for fast speed Rundown - to run down nuts.



With Speed Switch in Rundown select Loosen on the direction switch - to run off nuts.



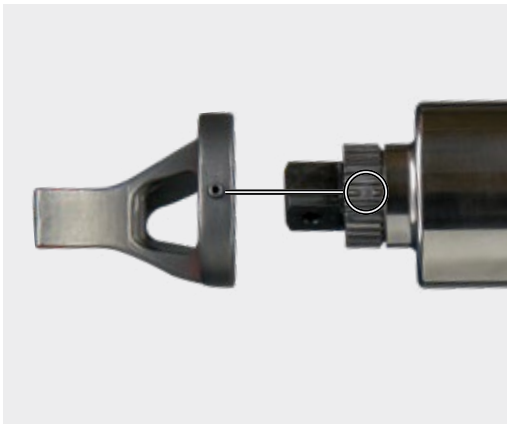
WARNING

Failure to make sure the reaction arm is in direct contact with an immovable object before fastening could result in serious injury. Make sure that no part of your body is in the path of the reaction arm when the nut is tightened to avoid injury.

The tool is configured for conventional torque by installing sockets and reaction arms.

INSTALL REACTION ARM

- Slide the reaction arm over the drive while aligning the screw with the flat on the spline.
- Tighten the set screw to firmly attach the reaction arm.
- Challenge the reaction arm to make sure it is firmly secured.
- Never modify a reaction arm as this may lead to personal injury or damage to the tool.



INSTALL SOCKET

- Make sure the O-ring is installed on the socket. Insert the pin part way into the socket.
- Slide socket on the drive while aligning the pin hole in the socket with the hole in the square drive.
- Push the pin through socket and square drive and seat the pin flush against the socket.
- Slide O-ring to retain the pin in place.

CONVENTIONAL TORQUE SETUP

- Power on the tool.
- Select fastener type - for conventional torque applications the fastener will be right hand (RH) or left hand (LH).
- If necessary set the speed switch to RUNDOWN, place the socket on the nut and pull the trigger to quickly run down the nuts until they are flush against the flange. Set the speed switch back to Torque once all nuts have been seated against the flange.
- Prior to applying torque, position a back-up wrench to prevent the back nut from turning during tightening.
- Place the socket on the nut, making sure to fully engage the nut.
- Make sure the reaction arm is firmly abutted against a stationary object before applying torque.

CONVENTIONAL TORQUE TIGHTENING

- Adjust the settings for Torque, Angle and Release.
- Pull and hold the trigger to apply torque.
- With RH or LH Fasteners, a message is displayed instructing the user press an additional button on the control panel to ensure the operator keeps both hands clear of the reaction arm.
- As soon as the user pushes any button the drive will turn.
- Once the tool starts, the reaction arm will move to firmly press against the reaction surface and then the tool will begin applying torque and tighten the nut.
- Continue holding the trigger until the tool reaches the desired torque and stops.
- If an ANGLE has been specified, continue holding the trigger - the tool will pause and restart after the angle delay.
- If a RELEASE has been specified, continue holding the trigger - the tool will pause and restart after the angle delay to release the reaction arm from the bearing surface.
- Release the trigger after the tool has completed all specified operations.
- The status light turns amber during operation. If the operation is successful, the status light will turn green, if unsuccessful the status light will turn red.
- If the BEEPER is enabled the tool will provide an audible beep upon completion of the operation.
- Remove the tool socket from the nut.
- Should torque be applied without a release angle the tool may lock onto the nut. If this happens, set the tool to LOOSEN to free the tool and repeat the tighten operation.

CONVENTIONAL TORQUE LOOSENING

- The tool provides maximum torque capacity in reverse for powerful breakout capability.
- Toggle the directional switch to set the tool to loosen.
- When using conventional torque install a back wrench to keep the back nut from turning.
- Position the tool over the nut.
- Position the reaction arm against a firm surface.
- Pull and hold the trigger and any button on the rear panel to apply torque to loosen the nut.
- Once the tool starts the reaction arm will move and firmly press against the reaction surface. The tool will then begin applying torque to loosen the nut.
- The status light turn amber during operation. If the operation is successful, the status light will turn green, if unsuccessful the status light will turn red.
- Remove the tool driver from the nut.

INSTALL HYTORC WASHER DRIVER

- The tool is easily configured for tightening bolts utilizing the HYTORC Washer.
- Identify the appropriate size HYTORC Washer Driver.
- Slide the washer driver over the square drive and spline while aligning the thumb screw with the flat on the spline.
- Tighten the thumb screw to secure the driver.
- For longer term use it is recommended to pin the drive to the square drive.
- Challenge the driver to make sure it is securely attached.

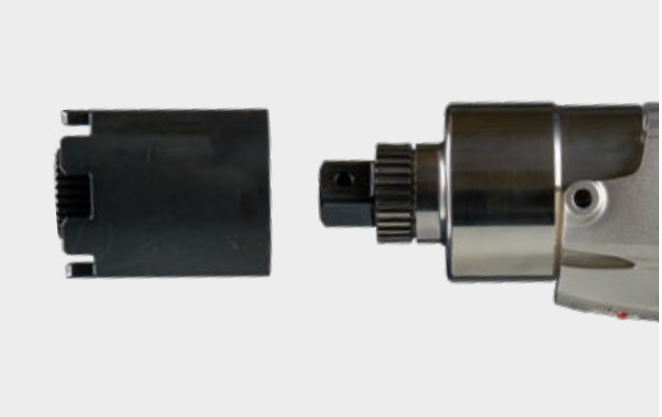
TIGHTENING WITH THE HYTORC WASHER DRIVER

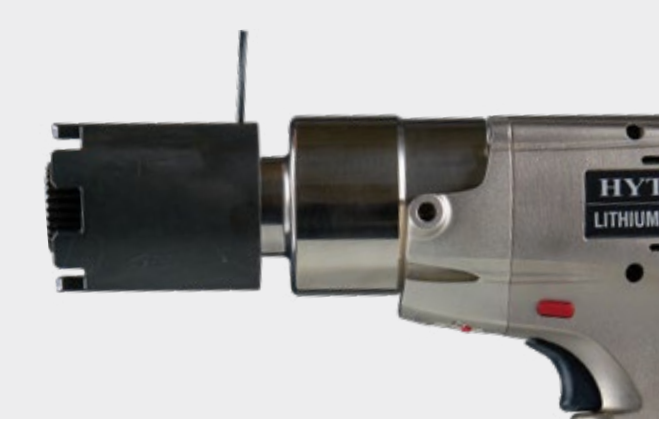
- Power on the tool, select the desired Torque, Angle and Release.
- Set the fastener type to HYTORC WASHER.
- If necessary set the speed switch to RUNDOWN to quickly run down the nuts until they are flush against the flange. Set the speed switch back to TORQUE after the run down is complete.
- Position the tool over the nut and HYTORC Reaction Washer.
- Pull the trigger to apply torque until the tool reaches the desired torque and stops.
- If an ANGLE has been specified, continue holding the trigger - the tool will pause and restart after the angle delay.
- If a RELEASE has been specified, continue holding the trigger - the tool will pause and restart after the angle delay.
- Release the trigger after the tool has completed all specified operations.
- During operation the status light will turn amber. If the operation is successful the status light will turn green, if unsuccessful the status light will turn red.
- If the BEEPER is enabled the tool will provide an audible beep upon completion of the operations.
- Remove the tool from the nut.
- Should torque be applied without a release angle the tool may lock onto the nut. If this happens set the tool to loosen to free the tool and repeat the tighten operation.

LOOSENING WITH THE HYTORC WASHER DRIVER

- The tool provides maximum torque capacity in reverse for powerful breakout capability.
- Toggle the directional switch to set the tool to loosen.
- Position the driver over the nut and HYTORC reaction washer and hold the trigger to begin applying torque
- During operation the status light will turn amber. If the operation is successful the status light will turn green, if unsuccessful the status light will turn red.
- Remove the tool driver from the nut.

INSTALLING THE HYTORC NUT DRIVER





- The tool is easily configured for tightening the HYTORC Nut.
- Identify the appropriate size HYTORC Nut Driver.
- Slide the nut driver over the square drive and spline while aligning the set screw with the flat on the spline.
- Pin the driver to the square drive to secure the driver to the tool.
- Tighten the set screw to secure nut driver.
- Challenge the nut driver to make sure it is securely attached.

TIGHTENING THE HYTORC NUT

NOTE: The HYTORC Nut inner sleeve is tightened in the counter clockwise direction (left hand threads).

- Power on the tool, select the desired torque and set the fastener type to HYTORC Nut.
- Position the tool over the nut.
- Pull the trigger to apply torque until the tool stalls at the specified torque.
- If a RELEASE ANGLE has been specified continue holding the trigger - the tool will restart and then stall again after completing the RELEASE angle. Then the tool can be released from the nut.
- Release the trigger after the tool has completed all specified operations.
- The status light will turn amber during operation. If the operation is successful, the status light will turn green, if unsuccessful the status light will turn red.
- If the BEEPER is enabled the tool will provide an audible beep upon completion of the operations.
- Remove the tool driver from the nut.
- Should torque be applied without a release angle the tool may lock onto the nut. If this happens set the tool to loosen to free the tool and repeat the tighten operation.

LOOSENING THE HYTORC NUT

- The tool provides maximum torque capacity in reverse for powerful breakout capability.
- Toggle the directional switch to set the tool to loosen.
- Position the driver over the HYTORC Nut and hold the trigger to apply torque until nut is loose.
- The status light turn amber during operation. If the operation is successful, the status light will turn green, if unsuccessful the status light will turn red.
- Remove the tool from the nut.

07/09/2019 - Back cover updated. For future-proofing all global locations have been removed from the back cover in favor of our HYTORC universe map.
07/31/2019 - French, Korean, and Spanish translations uploaded.
08/21/2019 - Multiple updates:

- The following text has been added for page 8 "NOTE: When not in use, remove the battery pack from the tool."
- Certificate of Conformance for Singapore added.

09/04/2019 - FCC statement updated.
11/04/2019 - Important information pertaining to Lithium tool and battery pack safety revised on pages, 1, 2 and 9.
01/14/2020 - Universal functionality updates.
04/06/2020 - Multiple updates:

- The following text has been added to About this Document page: "This telecommunication equipment conforms to the technical standards or requirements of NBTC." in English and Thai.
- LITHIUM-ION BATTERY CARE AND USE has been added to Appendix A.
- Certificate of Conformance for Thailand has been added to Appendix A.

04/09/2020 - Multiple updates:

- Notice of Proprietary Rights, Copyright Notice, Trademark Notice, and Patent Notice have been added to About this Document page.
- Disposal and Recycling and Shipping have been added to page 9.

05/21/2020 - Multiple updates:

- Service section removed.
- Legal Notice added to "About this Document" page.

09/18/2020 - Screen display on page 5 updated to show max torque output of tool.
10/26/2020 - Nigerian Communications Commission compliance added to Appendix A.
03/2021 - All instances of percentages (%) as an option for displaying torque have been removed.
10/2024 - Addition of LST 8000 to configuration list. Safety section removed.

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