

# HYTORC

The World's Most Trusted Industrial Bolting Systems



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## LITHIUM SERIES® II Electric Torque Tool Basic Operations Manual

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## ABOUT THIS DOCUMENT

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### ORIGINAL INSTRUCTIONS

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

**Models:** LST

**Configurations:** 0700, 1200, 2000, 3000, 5000

**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.)**

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**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**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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**WARNING!** Read all safety warnings designated by the  symbol and all instructions.

**Save all warnings and instructions for future reference.**

The term “power tool” in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

### A. WORK AREA SAFETY

- **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

### B. ELECTRICAL SAFETY

- **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
- **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- **Do not allow battery to get wet.** Do not operate tool in rain, snow or high humidity. Do not splash or immerse in liquids.
- **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- **If operating a power tool in a damp location is unavoidable, use a Ground Fault Circuit Interrupt (GFCI) protected supply.** Use of a GFCI reduces the risk of electric shock.

### C. PERSONAL SAFETY

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- **Use personal protective equipment. Always wear eye protection.** Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
- **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
- **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- **Dress properly. Do not wear loose clothing or jewelry. Keep your hair and clothing away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.
- **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.
- **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

#### D. POWER TOOL USE AND CARE

- **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- **Maintain power tools and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- **Keep cutting tool sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.
- **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

#### E. BATTERY TOOL USE AND CARE

- **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
- **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.
- **Do not use a battery pack or tool that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behaviour resulting in fire, explosion or risk of injury.
- **Do not expose a battery pack or tool to fire or excessive temperature.** Exposure to fire or temperature above 130 °C may cause explosion.
- **Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions.** Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

#### F. SERVICE

- **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
- **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers.

## G. IMPORTANT TOOL CARE AND HANDLING

- **Inspect all tool components as they are removed from the shipping container.** If damage is found to any component, contact the shipper immediately. Do not use the tool.
- **Modifying a tool or tool accessory is dangerous and invalidates the warranty**
- **Inspect the tool before each use.** Have any obviously worn or damaged parts replaced.
- **When not in use, store the tool and tool accessories in the plastic storage case supplied with the tool.** Do not store the tool and batteries in an environment outside of the following temperature and humidity range: -4°F (-20°C) to 122°F (50°C), 5% to 95% ambient relative humidity

## H. IMPORTANT BATTERY PACK INSTRUCTIONS

- **Do not incinerate the battery pack even if it is severely damaged or is completely worn out.** The battery pack can explode in a fire. Toxic fumes and materials are created when Lithium-ion battery packs are burned.
- **Do not charge or use the battery in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Inserting or removing the battery from the charger may ignite dust or fumes.
- **Contents of opened battery cells may cause respiratory irritation.** Provide fresh air. If symptoms persist, seek medical attention.



### WARNING

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Burn hazard. Battery liquid may be flammable if exposed to spark or flame.



### WARNING

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Never attempt to open the battery pack for any reason. If battery pack case is cracked or damaged, do not insert into charger or tool. Do not crush, drop, or damage battery pack. Do not use a battery pack or charger that has received a sharp blow, has been dropped or has been run over or damaged in any way (i.e. pierced with a nail, hit with a hammer, stepped on). Damaged battery packs should be returned to an authorized HYTORC service center for recycling.



### CAUTION

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The US Department of Transportation Hazardous Materials Regulations (HMR) actually prohibit transporting batteries in commerce or on airplanes, (i.e. packed in suitcases and carry-on luggage). When transporting individual batteries, make sure that the battery terminals are protected and well insulated from materials that could contact them and cause a short circuit. For any other concerns in regarding the transportation of LI-ION batteries, consult your Transportation Carrier.



## I. IMPORTANT BATTERY CHARGER SAFETY INSTRUCTIONS

- Before using charger, read all instructions and cautionary markings on charger, battery pack and product using battery pack
- **DO NOT attempt to charge the battery pack with any chargers other than the one in this manual.** The charger and battery pack are specifically designed to work together.
- **These chargers are not intended for any uses other than batteries supplied with LITHIUM SERIES Tools as described in this manual.** Any other uses may result in risk of fire, electric shock or electrocution.
- Do not expose charger to rain or snow
- To disconnect charger, firmly grasp plug and remove. Do not disconnect the charger by pulling on the cord.
- Make sure the cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress
- Do not use an extension cord unless it is absolutely necessary
- An extension cord must have adequate wire size (AWG) for safety. In general the larger the wire size the greater the capacity of the cable.
- Do not block any ventilation slots on charger power supply
- To clean the charger, first unplug from the power source, then wipe with a dry cloth



### WARNING

Burn hazard. Battery liquid may be flammable if exposed to spark or flame.



### WARNING

Burn hazard. To reduce the risk of injury, charge only tool batteries. Other types of batteries may burst causing personal injury and damage.



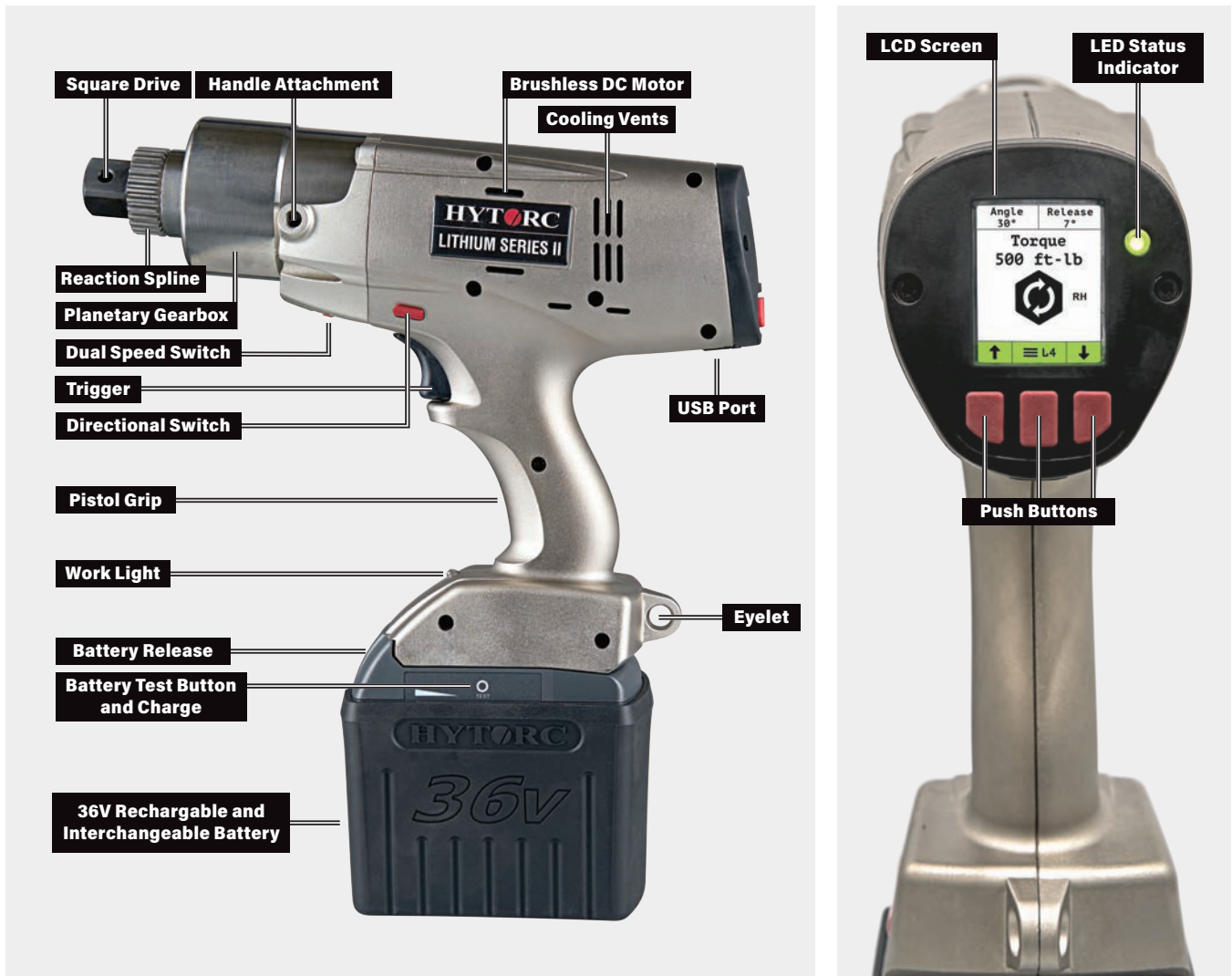
### CAUTION

Under certain conditions, with the charger plugged into the power supply, the charger can be shorted by foreign material. Foreign materials of a conductive nature such as, but not limited to, steel wool, aluminum foil, or any buildup of metallic particles should be kept away from charger cavities. Always unplug the charger from the power supply when there is no battery pack in the cavity. Unplug charger before attempting to clean.

## J. EMISSIONS

- **The noise emission, measured in accordance with EN 62841-1 I.2, is as follows:**
  - A-weighted sound pressure level  $L_{pA}$  does not exceed 70 dB(A)
  - A-weighted sound power level  $L_{WA} = 80.9$  dB(A) and its uncertainty  $K_{WA} = 3$ dB(A)
- **Wear hearing protection when required by job conditions**
- **The vibration total value and its uncertainty measured in accordance with EN 62841-1 I.3 is as follows:**
  - The vibration total value does not exceed 2.5 m/s<sup>2</sup>
- **The declared vibration total value has been measured in accordance with a standard test method and may be used for comparing one tool with another**
- **The declared vibration total value may also be used in a preliminary assessment of exposure**
- **The vibration emission during actual use of the tool can differ from the declared total value depending on the ways in which the tool is used**
- **Identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time)**

## 2. TOOL DESCRIPTION



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.

### 3. CHARGE, TEST AND INSTALL BATTERY

#### 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 slide battery pack off the charger
- Align the base of the tool with the rails in the battery and slide the battery pack firmly into the handle until you hear (or see) the lock snap in place
- To remove the battery pack from the tool, 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

## LITHIUM-ION BATTERY CARE AND USE

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- **Charge Only in Specified Charger:** Recharge the battery only with the HYTORC charger designed for the battery. Do not charge the battery with any other chargers. Do not alter the battery or force the battery to fit in other chargers.
- **Avoid Explosive Environments:** Do not charge or use the battery in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Inserting or removing the battery from the charger in explosive environments may ignite dust or fumes.
- **Do Not Service:** Do not attempt to service, disassemble or open a battery for any reason.
- **Do Not Drop, Impact or Crush:** Do not drop, impact or crush the battery. A battery that has been dropped, impacted or crushed may be damaged internally even if no damage is visible and should be disposed of properly.
- **Do Not Get Wet:** Do not expose a battery or charger to liquid, moisture or high humidity where water can condense on the battery. Do not operate in rain or snow. Do not use any battery that has been wet. Properly dispose of any battery that has been wet.
- **Do Not Use a Damaged Battery:** Do not insert a battery into charger or tool if battery pack case is cracked or damaged in any way. Any damaged battery should be disposed of properly.
- **Avoid Inhalation:** If fluids are seen coming from the inside of the battery, avoid breathing vapors and properly dispose of battery.
- **Avoid Contact:** If fluids from inside battery contact skin, flush affected area with water. If contents come into contact with eyes, flush with water for 15 minutes and seek medical attention.
- **Avoid High Temperatures:** Do not incinerate battery pack or expose to excessive heat. Toxic fumes, violent burning or even explosions may result. Do not store batteries in excess of 122° F (50° C).
- **Keep Terminals Clear of Metal Objects:** Make sure that battery terminals are protected from direct contact with metallic objects or materials which can potentially cause a short circuit.



### DISPOSAL AND RECYCLING

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Defective, damaged or spent batteries should be disposed of or recycled properly at an authorized waste collection or battery recycling center.

- **Dispose of Properly:** Lithium-Ion batteries should not be disposed of in the household (municipal) waste stream; they must be taken or shipped to an authorized electronic waste collection center or battery recycling center.
- **Protect the Environment:** HYTORC has partnered with Call2Recycle to ensure that batteries are responsibly recycled when they reach their end of life. Visit [call2recycle.org](http://call2recycle.org) to locate the battery recycling location closest to you.

### SHIPPING

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**Do not ship batteries if they can be disposed of or recycled locally.** Lithium-Ion batteries are regulated in most countries as hazardous materials for transportation. Should it be necessary to ship a battery, follow all relevant packaging, labeling and documentation regulations.

- **Contact Your Carrier** for details on how to safely pack and ship Lithium-Ion batteries.
- **Protect the Battery** so that terminals are not in contact with metal objects and protect the battery from moisture, shock and vibration.
- **Ship to HYTORC** via UPS Ground to: HYTORC, 100 Wesley Street, South Hackensack, NJ 07606.

### 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 a qualified 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 Tool is designed to provide dependable, accurate torquing on industrial bolting jobs. Follow these guidelines for reliable long term 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 is -4°F (-20°C) to 140°F (60°C)
- Keep cooling vents clear of dust and debris to maintain airflow and keep the motor and electronics within temperature limits. Do not subject the tool to extreme dust environments, or cover vents with your hand.
- The tool and electronic components are not certified or approved for explosive environments or areas containing combustible chemical materials

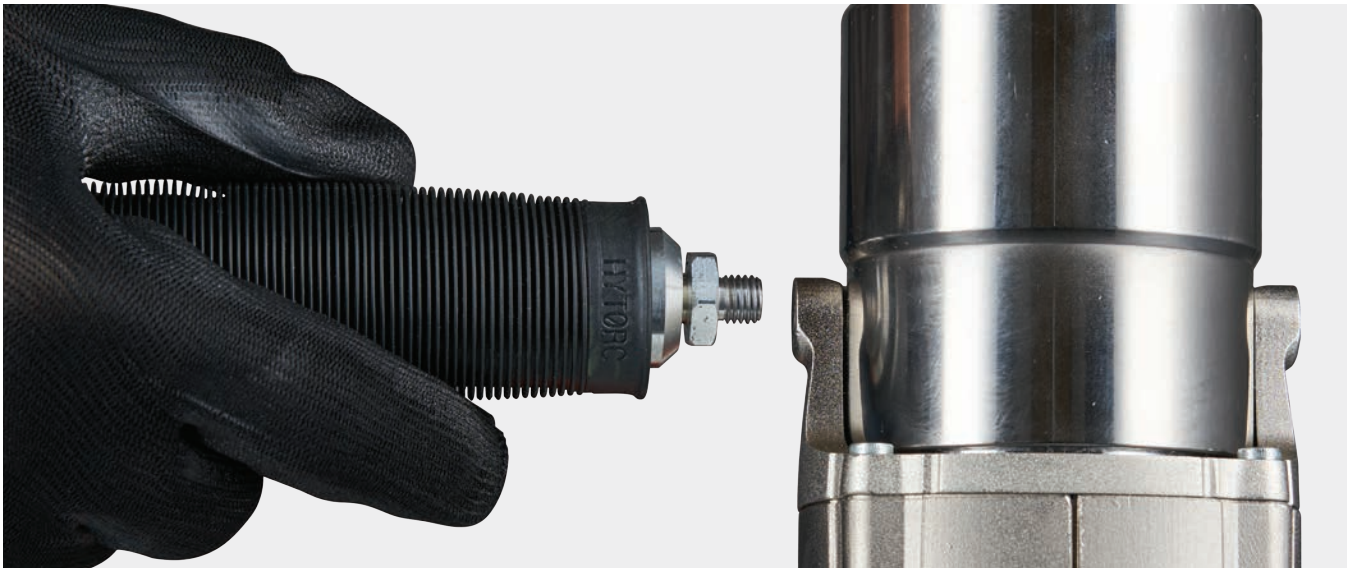


### SECURING THE TOOL



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

## 6. 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 parameters 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**

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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**

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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**

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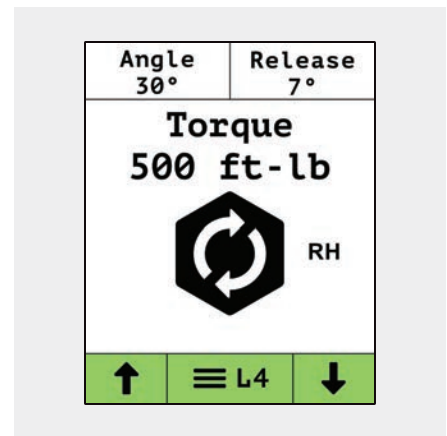
Torque units can be changed in the Settings menu to display the value in ft-lbs, N-m, KGFM and %. For details see the menu guide.

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.

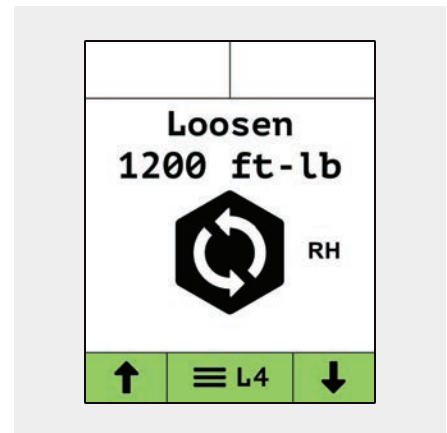
### CHANGE DIRECTION

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.

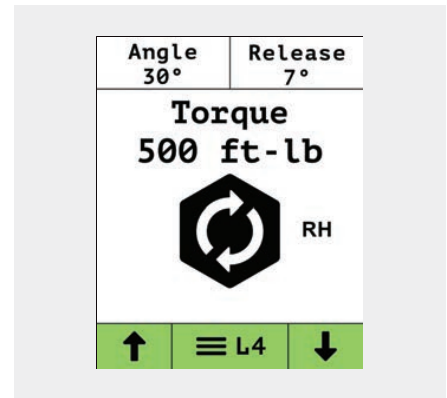
## 11. CHANGE SPEED

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 torquing operation.

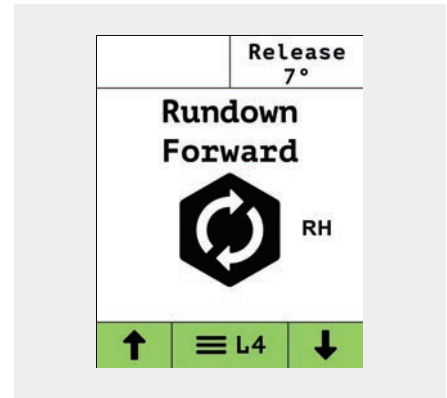
### CHANGE TO RUNDOWN

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.

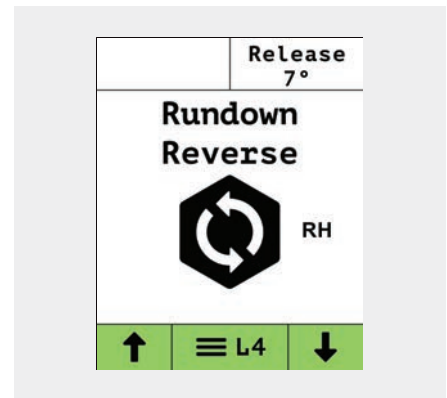
Push Switch forward for slow speed (Torque).



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.





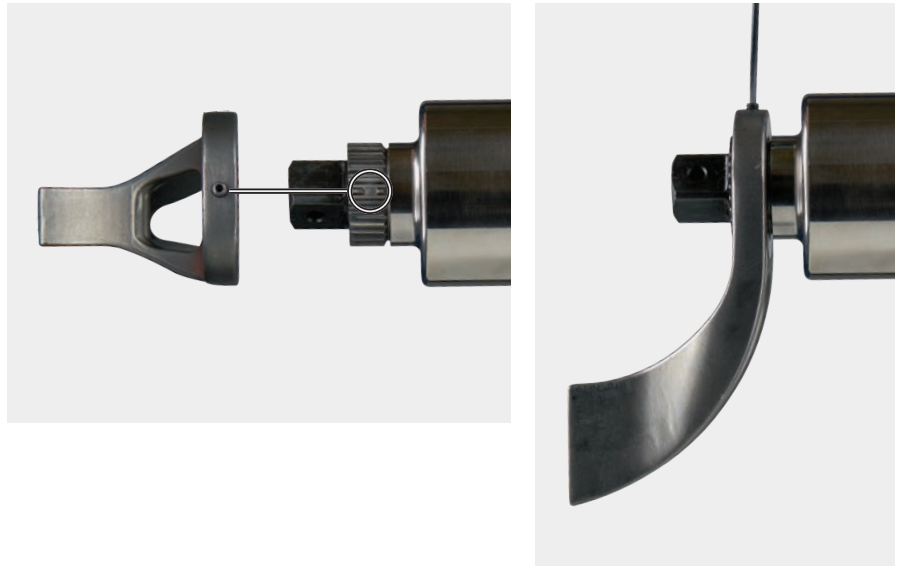
### WARNING

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.

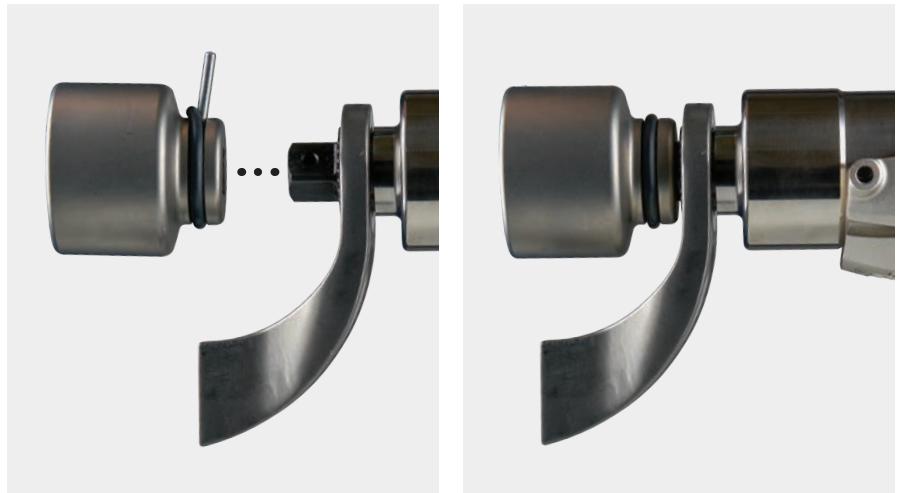
### INSTALL REACTION ARM

- 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

CERTIFICATE OF CONFORMANCE FOR JAPAN

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**Certificate**

No. 15-113009

**of  
 Technical Regulations Conformity  
 for  
 Specified Radio Equipment in Japan**

PHOENIX TESTLAB GmbH, operating as a Registered Certification Body (RCB ID: 204) with respect to Japan, declares that the listed product complies with the Technical Regulations Conformity Certification of Specified Radio Equipment (ordinance of MPT N° 37, 1981), Article 2, Paragraph 1, Item 19, Item 19-3, Item 19-3-2.

Product description:	Multi Radio Module
Trademark:	ODIN-W2
Model name:	ODIN-W250; ODIN-W262
Family name:	ODIN-W2
Serial No.:	-
Software Release No.:	-
Type of emissions:	F1D/D1D/G1D
Frequency and power:	802.11b: 2412-2472 MHz: 13 ch; 3.00 mW/MHz 802.11g: 2412-2472 MHz: 13 ch; 8.00 mW/MHz 802.11n (HT20): 2412-2472 MHz: 13 ch; 8.00 mW/MHz BT: 2402-2480 MHz: 79 ch; 0.15 mW/MHz (FHSS/ GSKF) BT: 2402-2480 MHz: 79 ch; 0.08 mW/MHz (FHSS/ m4-DQPSK) BT BLE: 2402-2480 MHz: 40 ch; 2.70 mW (DFS) 802.11a: 5150-5320 MHz: 8 ch; 2.00 mW/MHz 802.11n (HT20): 5180-5320 MHz: 6 ch; 2.00 mW/MHz 802.11a: 5500-5700 MHz: 11 ch; 2.00 mW/MHz 802.11n (HT20): 5500-5700 MHz: 11 ch; 2.00 mW/MHz
Manufacturer:	Flextronics International GmbH
Address:	Friesacher Strasse 3
City:	A-6330 Althofen
Country:	Austria

This certificate is granted to:

Certificate holder: u-blox Malmö AB  
 Address: Östra Varvsgatan 4, 5 tr  
 City: Malmö SE-211 75  
 Country: Sweden

This certificate has 2 annexes.

Bielefeld, 3. Nov. 2015  
 Place, Date

PHOENIX TESTLAB GmbH  
 32625 Bielefeld  
 Signature, Stamp

CERTIFICATE OF CONFORMANCE FOR SINGAPORE

**Complies with  
IMDA Standards  
DA108339**

CERTIFICATE OF CONFORMANCE FOR THAILAND



เครื่องวิทยุคมนาคมนี้ ได้รับยกเว้น ไม่ต้องได้  
รับใบอนุญาตให้มี ใช้ซึ่งเครื่องวิทยุคมนาคม  
หรือตั้งสถานีวิทยุคมนาคมตามประกาศ กสทช.  
เรื่อง เครื่องวิทยุคมนาคม และสถานีวิทยุ  
คมนาคมที่ได้รับยกเว้นไม่ต้องได้รับใบอนุญาต  
วิทยุคมนาคมตามพระราชบัญญัติวิทยุคมนาคม  
พ.ศ. 2498



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Call Center 1200 (InswS)



**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 page 9.
- Certificate of Conformance for Thailand has been added to page 28.

**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.





# HYTORC WORLD HEADQUARTERS

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