

LITHIUM SERIES® II

Electric Torque Tool



BOSS Training

HYTORC

BOSS Training Series
Basic Operation and Safety School

Expanded Functionality

NEW

❑ **TorcSense™** Technology, Strain-Based Transducer and closed loop monitoring

NEW

❑ 5000 model expands range up to 5,000 ft-lbs of torque.

NEW

❑ **Snug** function brings bolting surfaces into contact

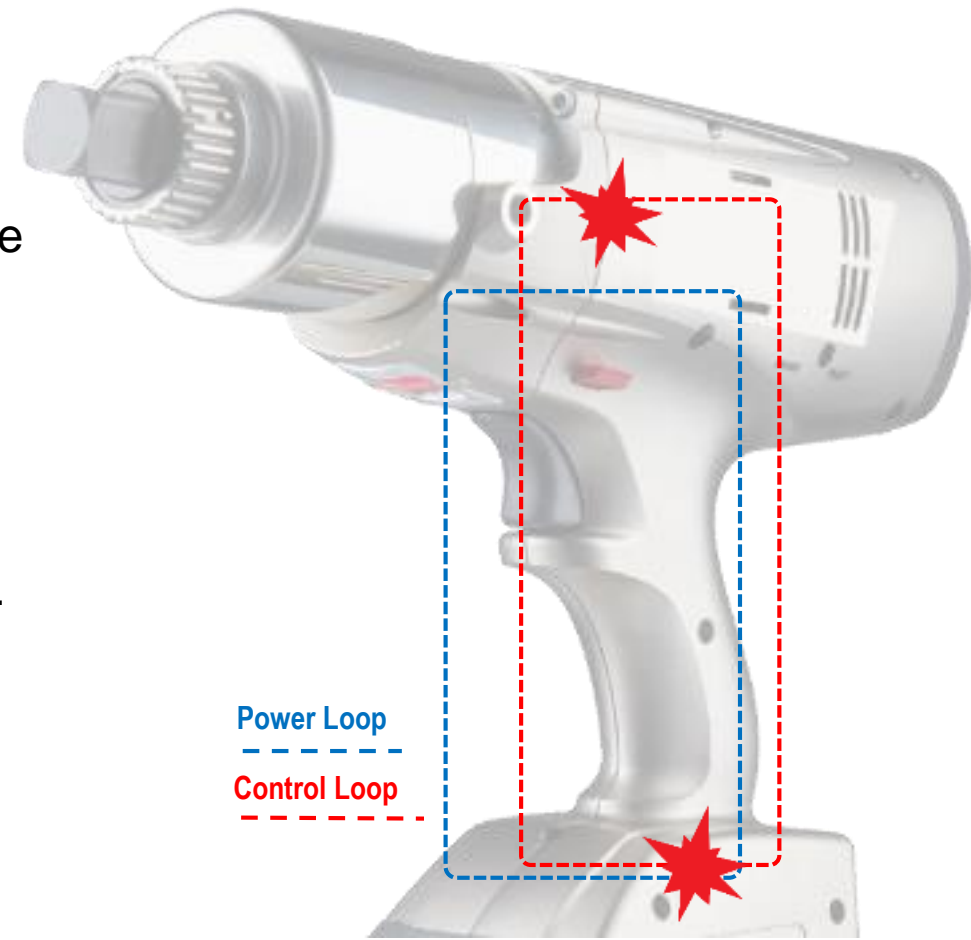
NEW

❑ **Bluetooth® Wireless technology** for cordless data capture

NEW

❑ **Advanced Bolting** options:

- ❖ **Turn Angle** – For Turn-Of-Nut tightening method
- ❖ **Torque Check** – to determine if a nut still meets specification.
- ❖ **Rotations** – turns a fastener a specific number of rotations.



Greater Durability

NEW

- ❑ New 36V DC Brushless Motor runs cooler and more efficiently for 5x longer life

NEW

- ❑ Improved gearboxes - 20% stronger, improved impact resistance

NEW

- ❑ Aluminum handle design for improved impact resistance to protect electronics

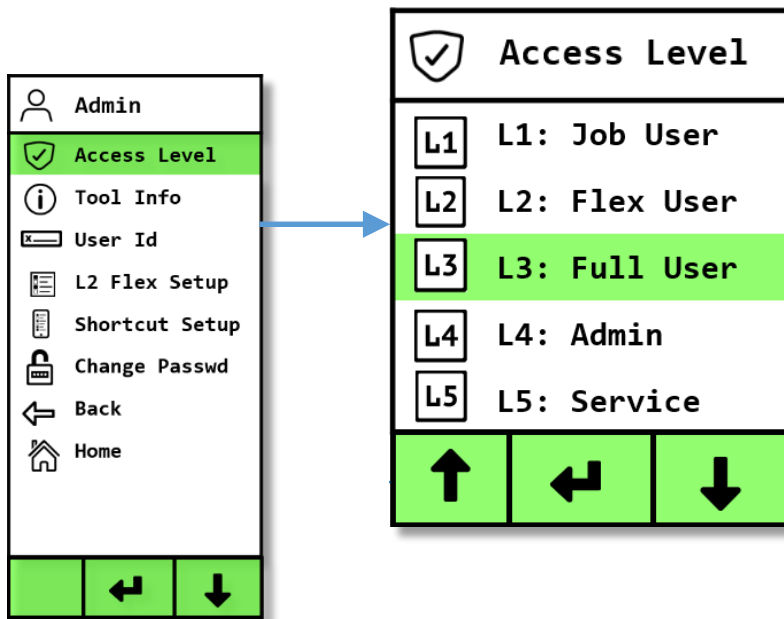
NEW

- ❑ Rear cover shock guard improves impact resistance and protects screen & buttons

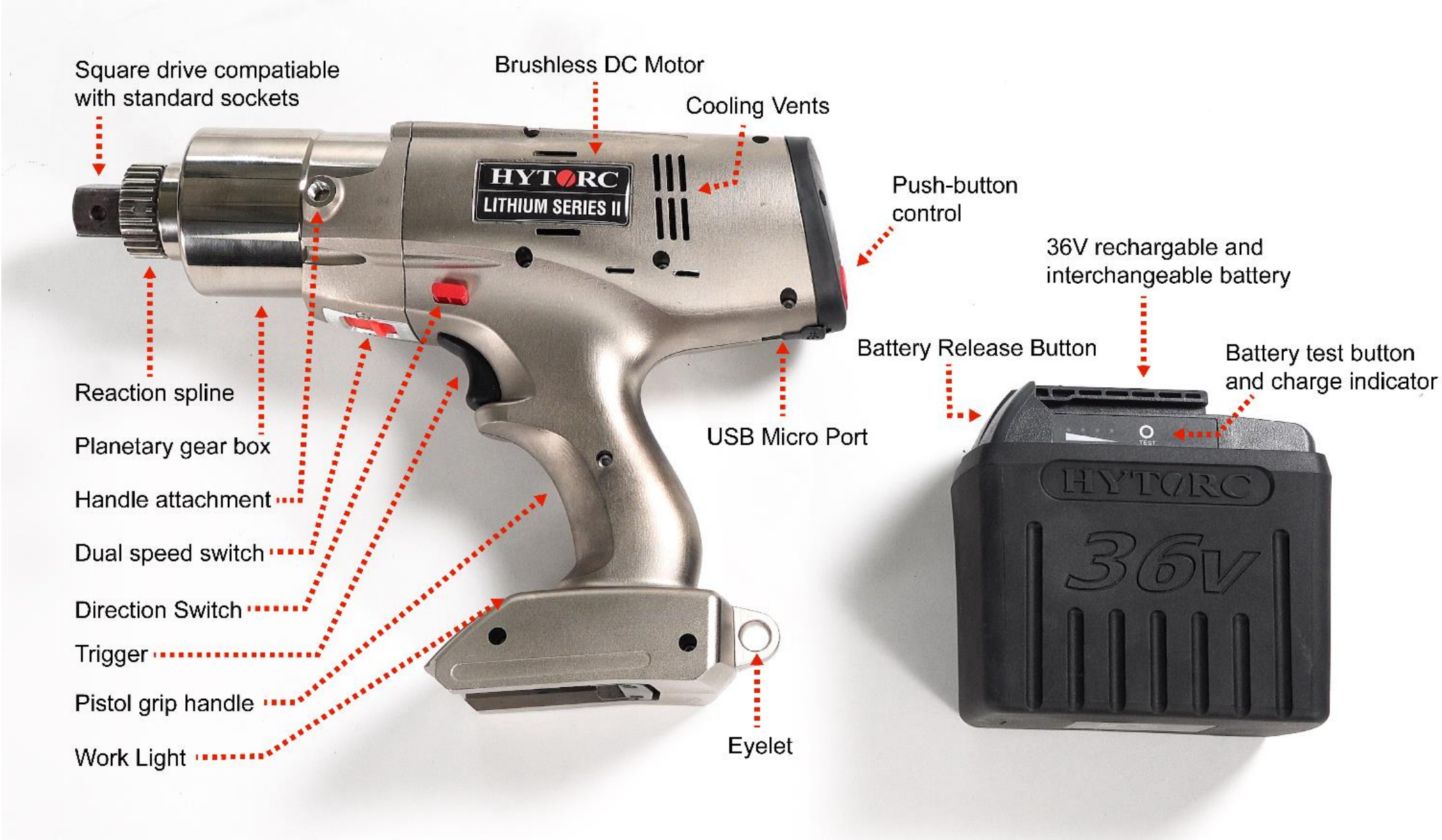


Improved Usability

- NEW** Side Handle standard with every model, provides greater control
- NEW** Work light improves visibility, safety and productivity
- NEW** High resolution display and intuitive menu system & icons
- NEW** Password-protected customizable access levels



Tool Overview



Tool Overview



MODEL	Weight (Imperial)	Weight (Metric)	Torque Range (Imperial)	Torque Range (Metric)
LST-0700	11.7 lbs	5.3 kg	150-700 ft-lbs	203.4-949.1 Nm
LST-1200	12.0 lbs	5.4 kg	200-1200 ft-lbs	271.2-1,627 Nm
LST-2000	16.6 lbs	7.5 kg	325-2,000 ft-lbs	440.6-2,711.6 Nm
LST-3000	17.7 lbs	8.0 kg	500-3,000 ft-lbs	677.9-4,067.5 Nm
LST-5000	22.4 lbs	10.2 kg	800-5,000 ft-lbs	1,084.7-6,779.1 Nm

LITHIUM SERIES Comparison



	Lithium Series II	Lithium Series I
Motor	Brushless, Longer Life, Quiet	Brushed
Gearbox	Torque Multiplier, 20% Stronger, Nickel Plated	Torque Multiplier
Housing	All Aluminum	Plastic with Aluminum Frame
Direction Control	Switch	Via Menu
Display	High Density LCD, 4X Resolution	Standard Density LCD
Torque Measurement	TorcSense™ Technology	Current Controlled
Accuracy	± 5%	± 5%
Model Sizes	700, 1200, 2000, 3000, 5000	700, 1000, 2000, 3000
Worklight	Available	-
Communication	USB, Bluetooth Wireless Technology	USB
Side Handle	Standard Accessory	-
Menu Navigation	Intuitive Hierarchy	Multiple Menus
Advanced Bolting	Torque Check, Turn Angle, Rotations	Torque Check (larger models)
Administrative	5 Password Access Levels	2 Password Access Levels
Shortcut	Customizable Menu	Limited to Buttons
Documentation	Data Transfer, Jobs, Profiles	Data Transfer
Snug Function	Available	-
Compliance	Global	Limited/Outdated



L – LITHIUM SERIES II Tool Procedures

- L1 General Handling & Usage
- L2 Test, Charge & Install Battery
- L3 Install Reaction Arm (Conventional)
- L4 Install Socket (Conventional)
- L5 Install HYTORC Washer Driver
- L6 Install HYTORC Nut Driver
- L7 Install Side Handle
- L8 Actuate Control Switches
- L9 Home Screen/Menu System
- L10 Initialize Basic Bolting
- L11 Advanced Bolting Features
- L12 Jobs
- L13 Profiles
- L14 Settings
- L15 Admin Menu

See LITHIUM SERIES Operations Guide for more detailed instructions regarding menu

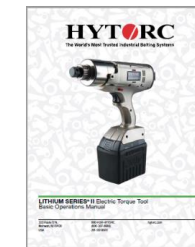
General Handling & Usage

Inspect Tool and Calibration

- 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



Check Calibration Date



Store Tool and instructions in case

General Handling & Usage

Environmental Considerations

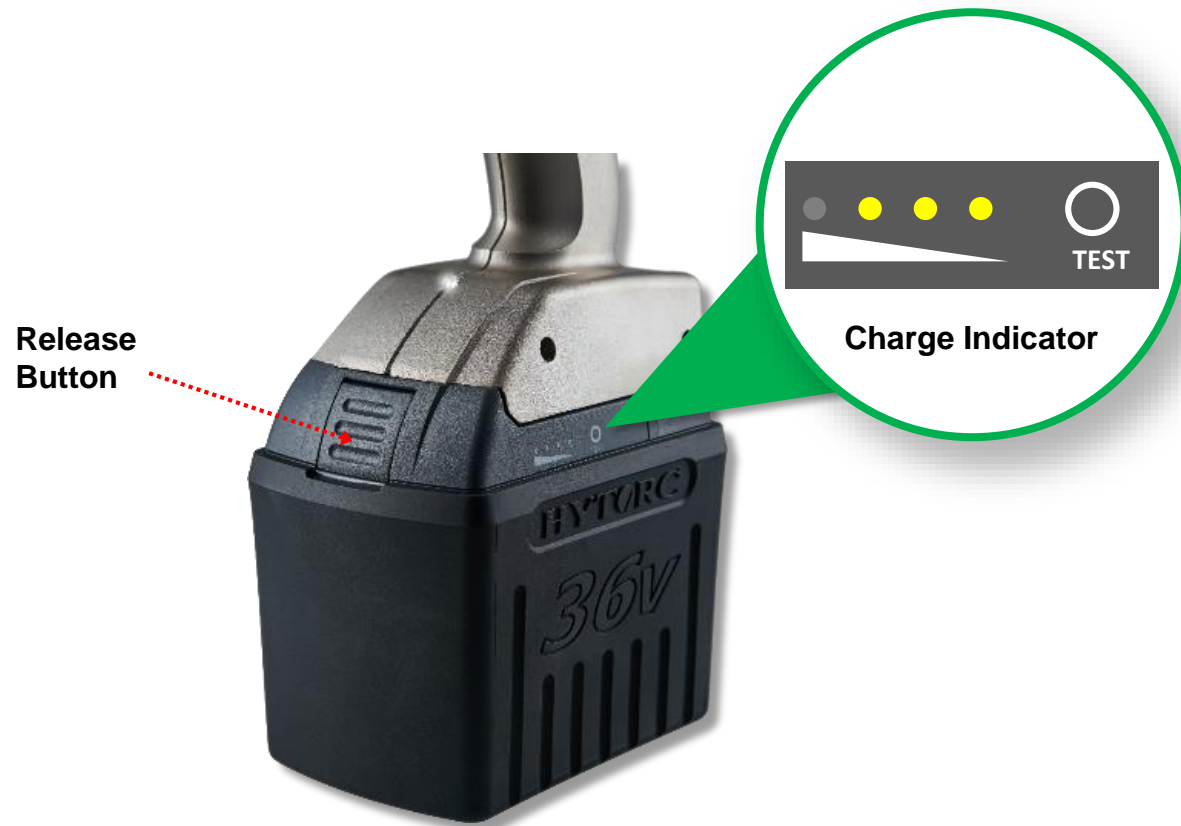
- The tool should not be exposed to moisture. Do not operate in rain, snow or extreme humidity.
- The operating temperature range of the tool is -4°F (-20°C) to 140°F (60°C)
- Keep cooling vents clear of dust and debris to maintain airflow and keep the motor and electronics within temperature limits. 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



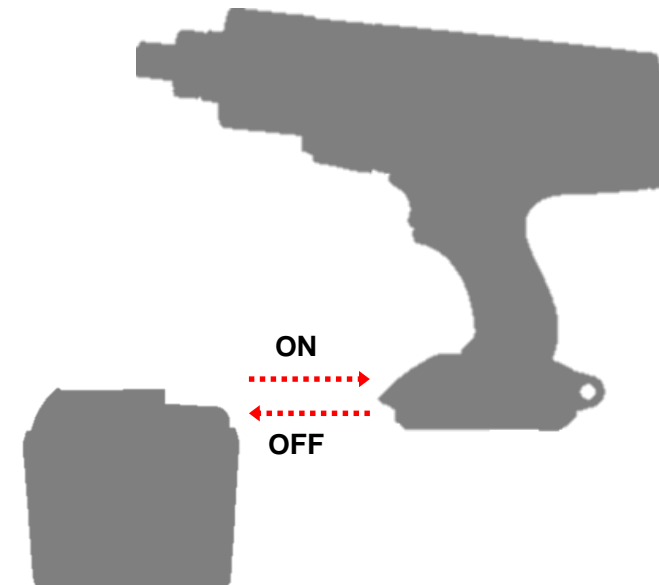
**Follow local practices or standards for securing the tool from dropping.
The eyelet fits most standard lanyards.**

Test, Charge & Install Battery

- ❑ Press TEST button on battery to display remaining charge
- ❑ Before charging battery verify local voltage supply to ensure capability with charger; this will typically be 110 or 220 Volts AC.
- ❑ Connect power cord to grounded outlet. If necessary, connect plug adapters for compatibility with local power outlets.



- ❑ Insert battery by sliding it onto the charger until it locks into place. The flashing green indicator light means the battery is charging.
- ❑ Battery will be fully charged within 90 minutes. The indicator light will stop flashing to indicate battery is fully charged.
- ❑ Remove battery by pressing release button and sliding it off the cradle. Slide battery onto bottom of the Tool until it firmly latches into place.

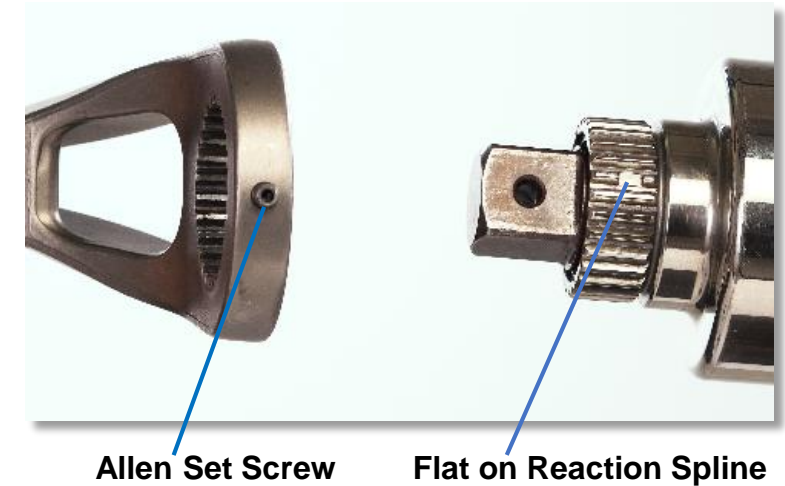


L3 Install Reaction Arm (Conventional Torque)

- ❑ Reaction arm used only for conventional bolting applications.
- ❑ Slide the reaction arm over the drive spline while aligning the Allen Set Screw with the flat on the Reaction Spline.
- ❑ Tighten Allen Set Screw to firmly attach the reaction arm to the spline.
- ❑ Challenge the reaction arm to make sure it is firmly secured.



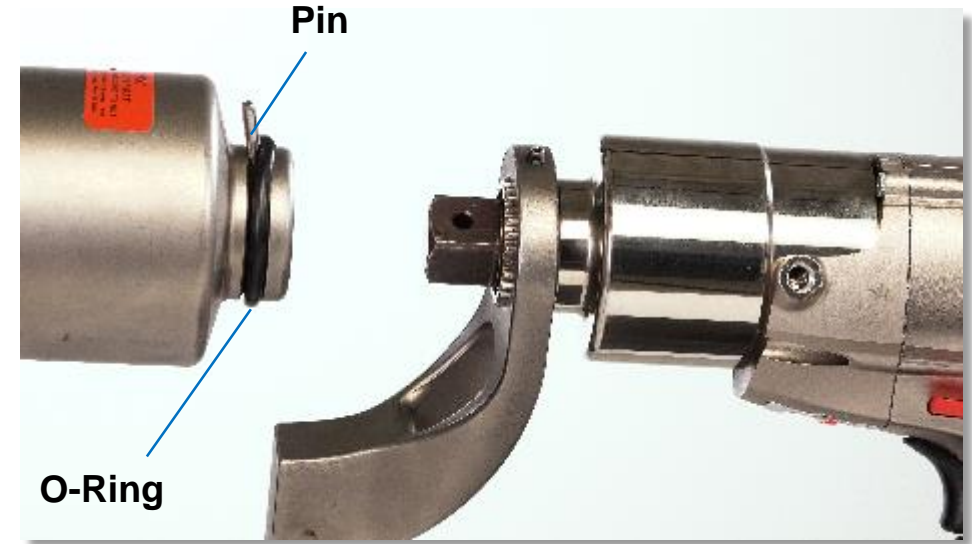
Caution: Never modify a reaction arm!
Changes in the reaction arm may lead to personal injury or damage to the Tool.



Tighten Screw

L4 Install Socket (Conventional Torque)

- ❑ Align socket pin hole with hole in the square drive.
- ❑ Make sure the O-ring is installed on the socket – insert the pin part way into the socket.
- ❑ Slide socket on square 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 in place to cover and hold pin in place.



L5

Install HYTORC Washer Driver

- ❑ Slide washer driver over square drive and spline while aligning thumb screw with flat on the spline.
- ❑ Tighten thumb screw to secure Washer Driver.
- ❑ Test to make sure that washer driver is securely attached to the spline.



L6

Install HYTORC Nut Driver

- ❑ Slide nut driver over the square drive and spline while aligning the Allen screw with the flat on the spline.
- ❑ Tighten the Allen screw to secure Nut Driver.
- ❑ Test to make sure that nut driver is securely attached to the spline.



L7

Install Side Handle

- ❑ The side handle screws into the bearing housing on either the right or left side of the tool.
- ❑ Engage threads and rotate clockwise until the handle no longer rotates.
- ❑ Hand tighten only.



Actuate Control Switches

- ❑ Press any button to power on the Tool.
- ❑ Press the Trigger to Activate the Tool.
- ❑ Press the Direction Switch to reverse direction.
- ❑ Slide the Speed Switch to switch from low speed TORQUE to high speed RUN DOWN.

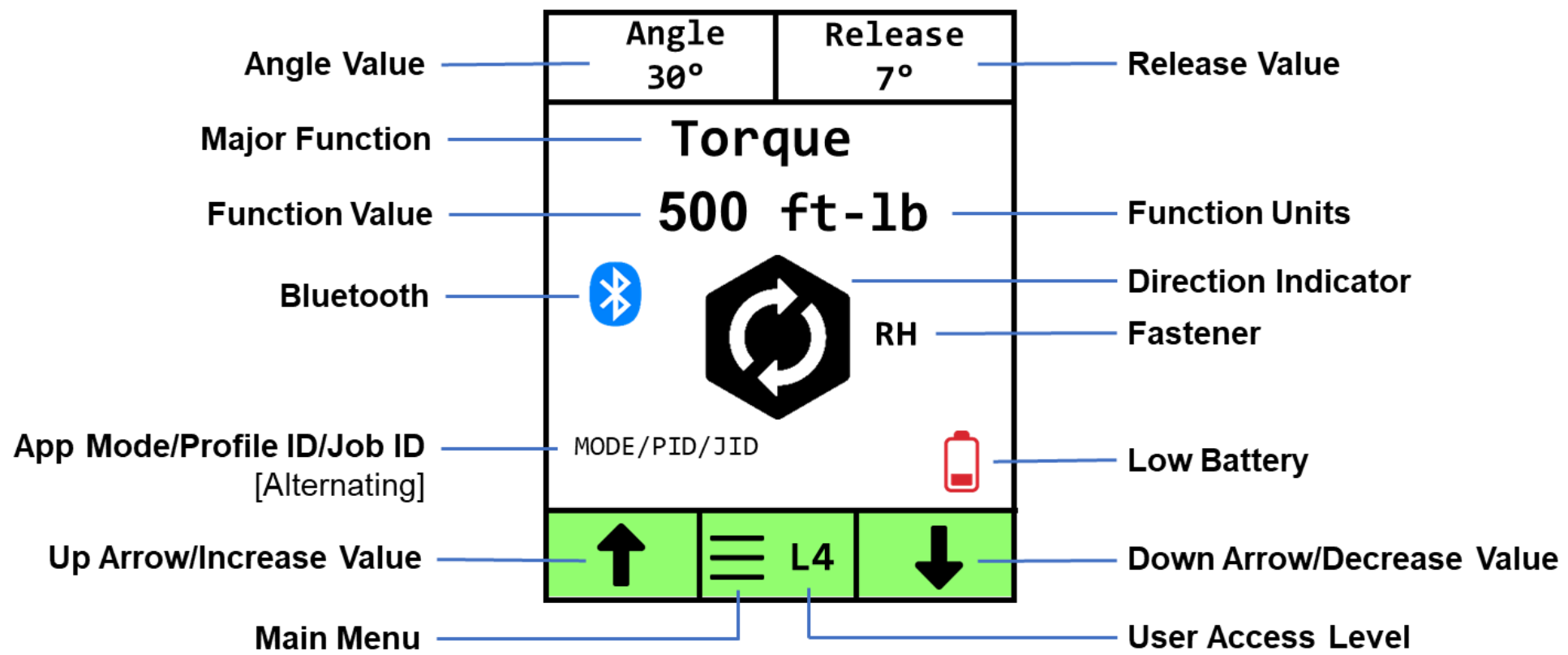
Direction Switch



Speed Switch



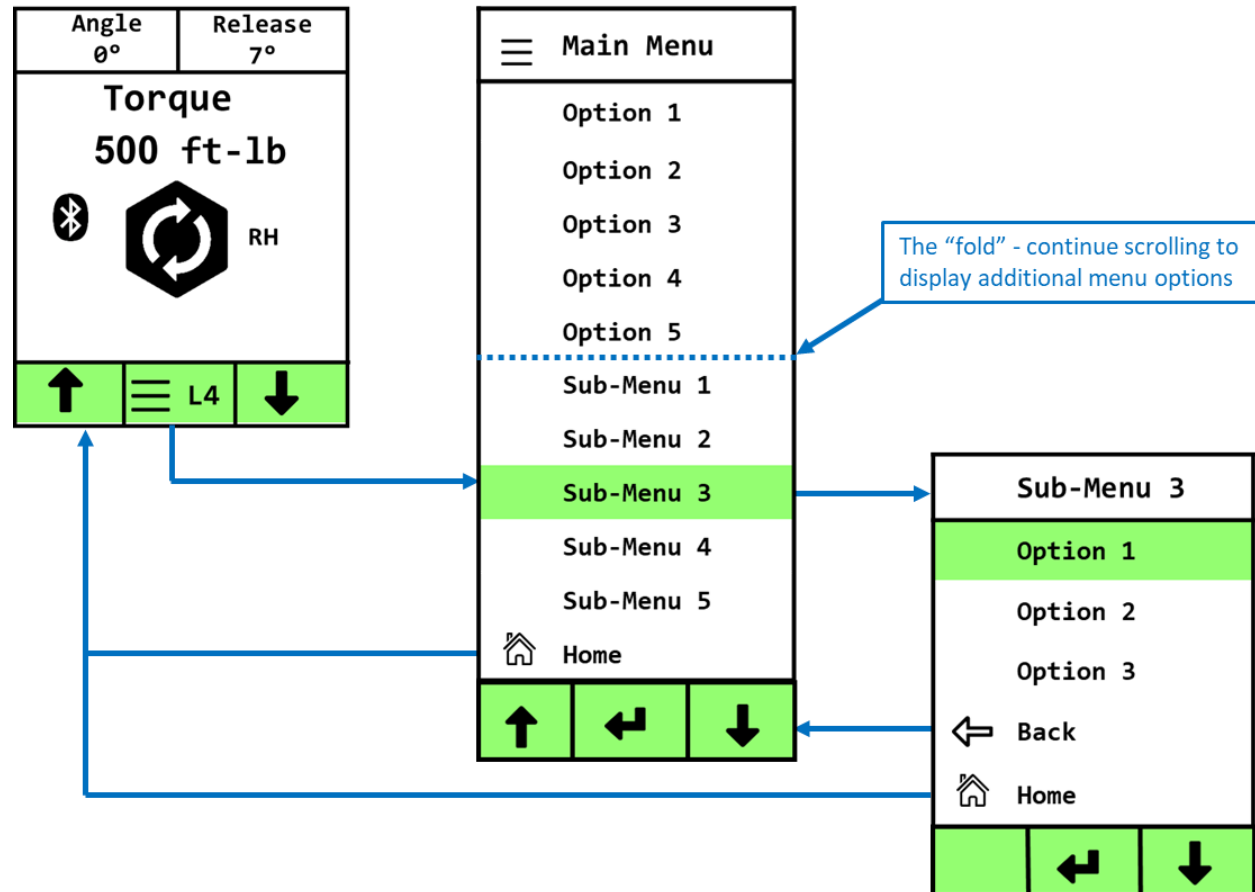
Home Screen/Menu System



See LITHIUM SERIES Operations Guide for more detailed instructions regarding menu

Home Screen/Menu System

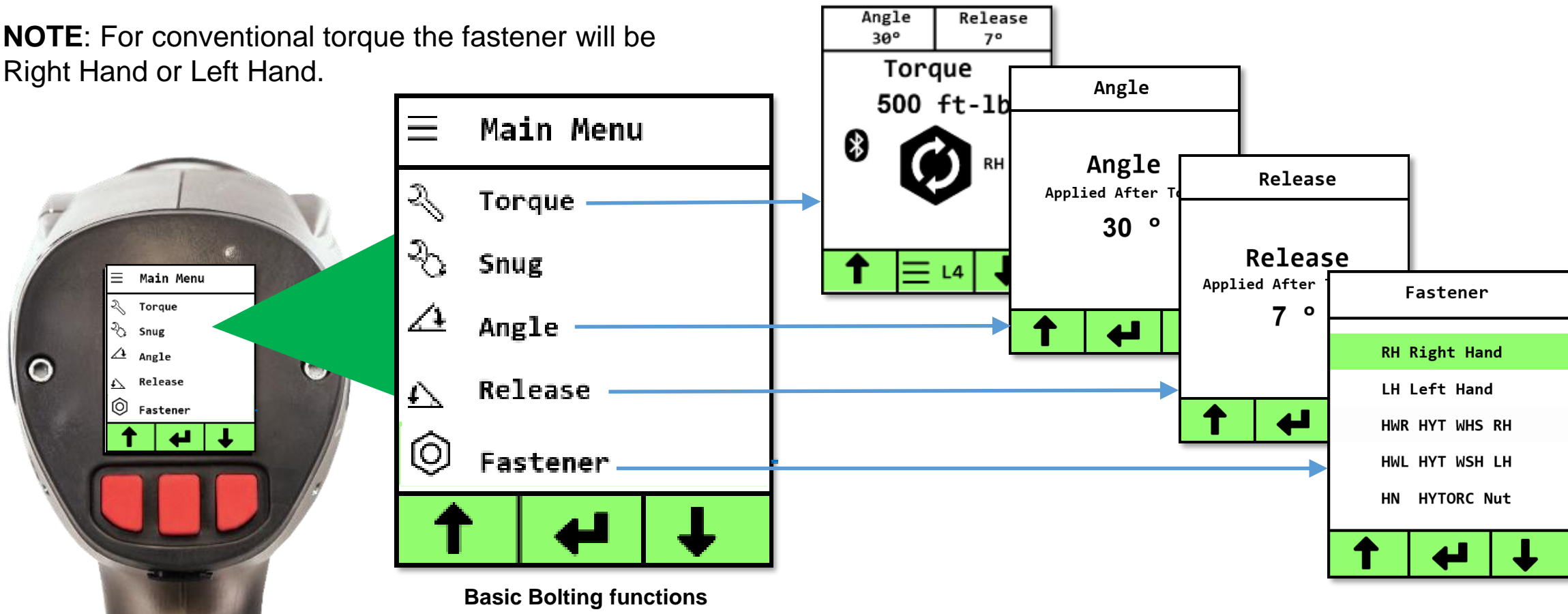
- ❑ All bolting functions are configured through a system of menus via the push buttons.
- ❑ Scroll to desired selection and specify desired values using the ↓ and ↑ buttons.
- ❑ Press the middle button to enter selection. Press ≡ to access the Main Menu.



Initialize Basic Bolting

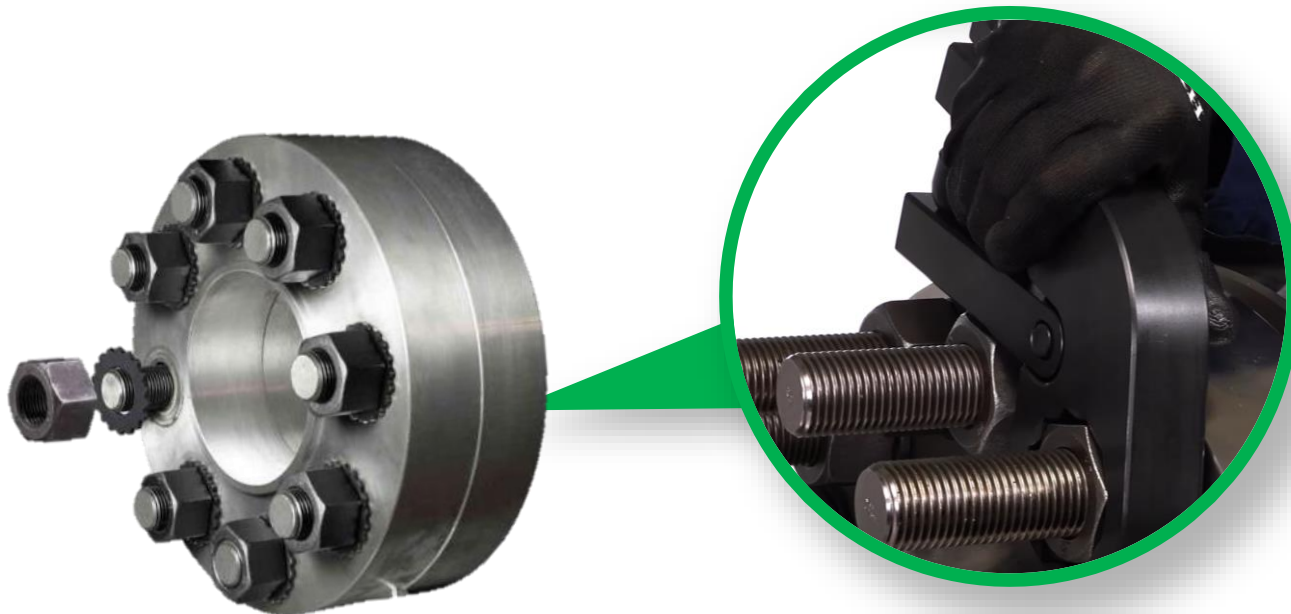
- ❑ Basic bolting options are located at the top of the Main Menu.
- ❑ Specify the desired **Torque** and **Fastener** type using the ↓ and ↑ buttons. Enter values for **Angle** and **Release**, if desired.

NOTE: For conventional torque the fastener will be Right Hand or Left Hand.



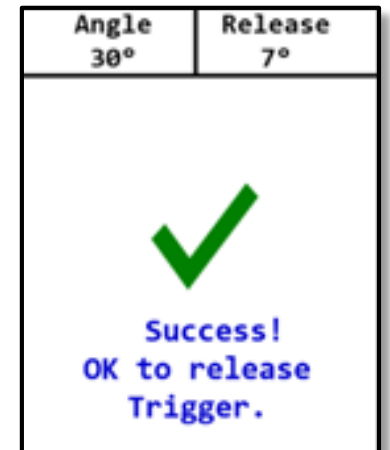
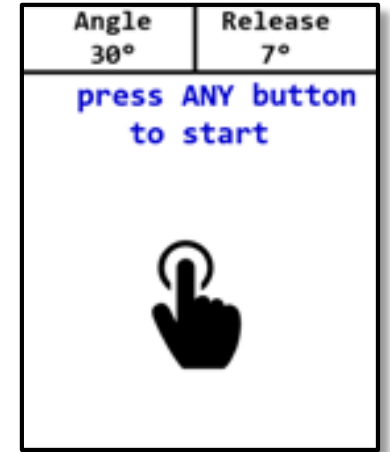
Initialize Basic Bolting

- ❑ Press the Direction Switch to set Tool direction.
- ❑ Set Speed Switch to TORQUE or RUNDOWN.
- ❑ Secure the back nut, if necessary, to prevent from turning during torque operation.
- ❑ For conventional bolting, brace reaction arm firmly against anchor point.
- ❑ Place socket over nut until firmly engaged. If using the HYTORC Washer or HYTORC Nut, make sure the driver properly engages the fastener.



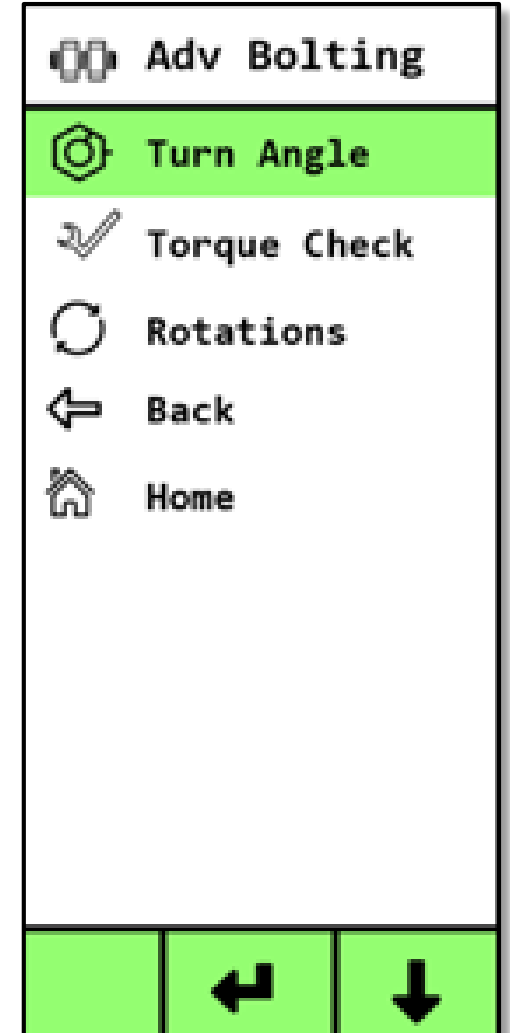
Initialize Basic Bolting

- Pull and hold the trigger. A message instructs the user to press any button to start, to keep hands clear of reaction arm.
- Once operator pushes a button the drive will begin to turn.
- If ANGLE or RELEASE has been specified the tool will pause before finishing each operation.
- Successful operation is indicated with beeper sound, if enabled, and green status light.
- If no RELEASE has been set the Tool may lock onto the nut; set Direction Switch to loosen and jog trigger until Tool is free.



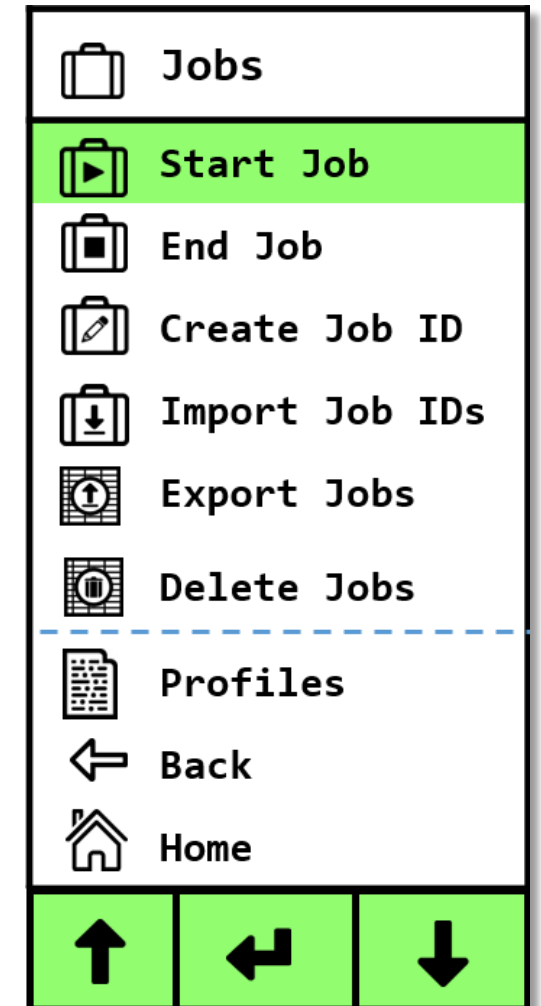
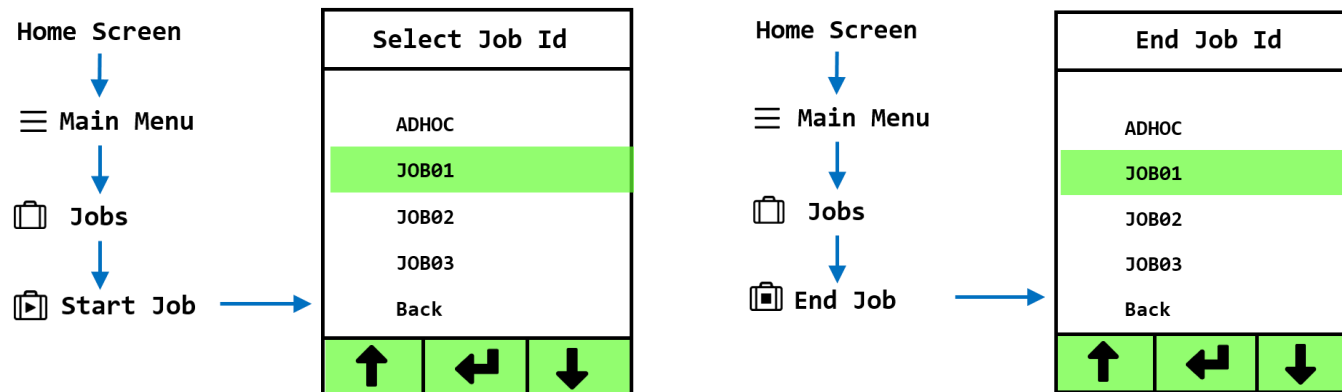
Advanced Bolting Features

- ❑ **Turn Angle:** used to complete Turn-Of-Nut procedures by turning a snug-tightened nut through specified angle.
- ❑ **Torque Check:** used to determine whether a previously tightened nut still meets specification.
 - Typically, the user sets Torque Check to 90% of the specification value, pulls the trigger and monitors the nut to detect any movement.
 - When job data is exported, the profile type for Torque Check is “TCK”.
- ❑ **Rotations:** turns a fastener through a specific number of rotations.
 - Tool will turn nut and stop at the specified number of Rotations.
 - Continue holding trigger if applying angle or release.
 - The maximum capacity of the rotations feature is 99.9 rotations.



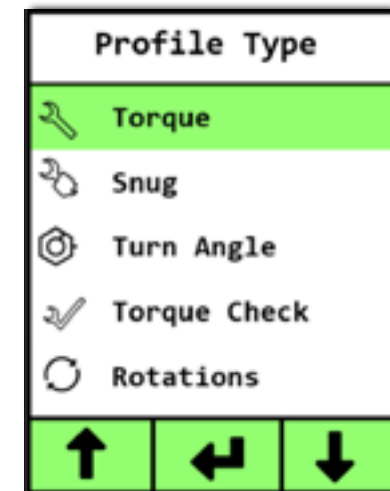
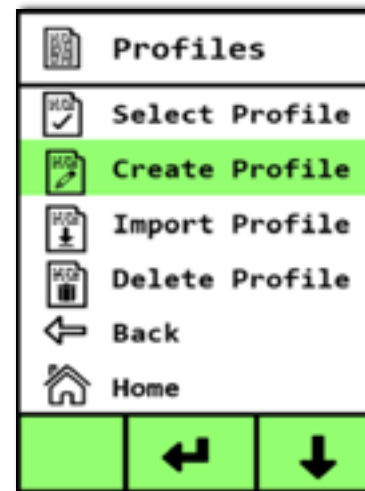
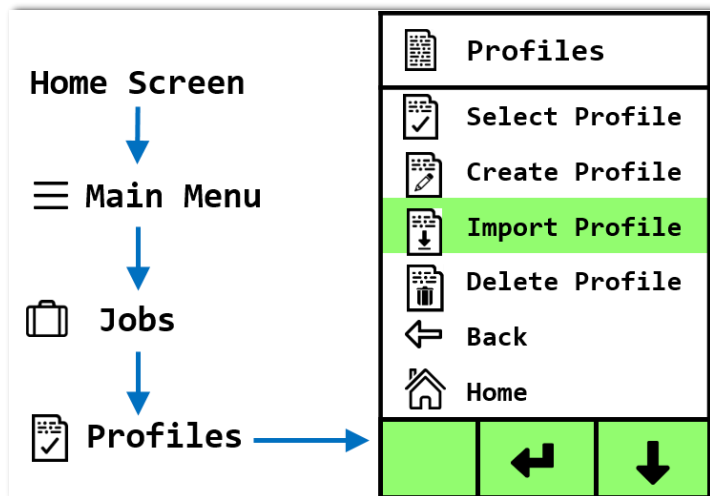
Jobs

- ❑ The **Jobs** function allows the tool to record and document bolting results for a specific operation or sequence. The Job record includes a Job ID, the tool parameters and results for each bolting operation.
- ❑ **Start Job:** Select a Job ID and begin recording data under that ID. Select **End Job** to stop recording.
- ❑ **Create Job ID:** Create a Job ID of up to 8 alphanumeric characters.
- ❑ **Import Job ID:** Import Job IDs from a PC via USB or Bluetooth.
- ❑ **Export Jobs:** Send documentation to a PC via USB or Bluetooth.
- ❑ **Delete Jobs:** Allows the user to delete job data.


















Profiles

- ❑ A **Profile** is a saved set of tool parameters can be easily recalled from memory. It includes a Profile ID (PID), a Profile Type (PTYPE), and the parameters required for the specific profile type.
- ❑ A profile can be entered directly with the 3-button interface via **Create Profile**. Enter the Profile ID by scrolling and selecting up to eight characters. Press the center button to complete the entry.
- ❑ Select one of the five **Profile Types** from the menu, then enter the desired parameters.
- ❑ Once saved, the profile can be recalled using the **Select Profile** option. When a profile is active the parameters are displayed on the screen along with the profile ID.
- ❑ The user can also import profiles from a PC via USB or Bluetooth.



Settings

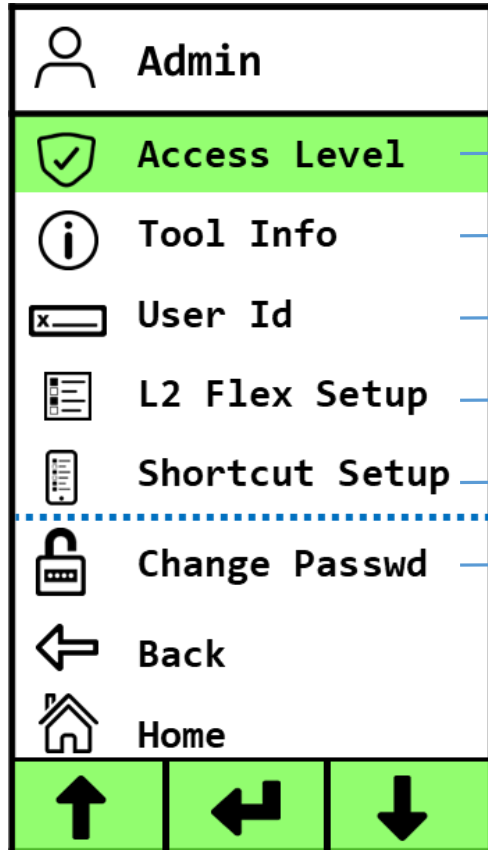
The **Settings** Menu provides options typically used upon initial setup or for a new project.

 Units	Units: Display torque in ft-lbs, N-m, kgf-m or % of maximum torque.
 Clock	Clock: Set time and date.
 Bluetooth	Bluetooth: Configure Bluetooth settings.
 Torque Limits	Torque Limits: Set limits on Torque operations.
 Angle Limits	Angle Limits: Set limits on Angle operations.
 Angle Delay	Angle Delay: Adjust time between Torque, Angle, and Release.
 Beeper	Beeper: Turn notification beeper on or off.
 Invert Screen	Invert Screen: Flip screen (for when the Tool is inverted).
 Icons	Icons: Turn the menu icons on or off.
 Auto Shutdown	Auto Shutdown: Enable/disable 5 minutes automatic shutdown.
 Button Delay	Button Delay: Set button response time.
 Work Light	Work Light: Enable/disable the work light.
 App Mode	App Mode: Used to sync tool with HYTORC bolting software.
 Back	
 Home	

Admin Menu

The **Admin** Menu provides for various administrative functions.

NOTE: Not all menu items are available at all access levels.



Access Level: Set Tool to one of four password-protected access levels.

Tool Info: View Tool information such as firmware version and cycle count.

User ID: User can enter their own unique ID for job documentation.

L2 Flex Setup: Admin can configure functions available to L2 Flex Users.

Shortcut Setup: Admin can create custom menu in place of the main menu.

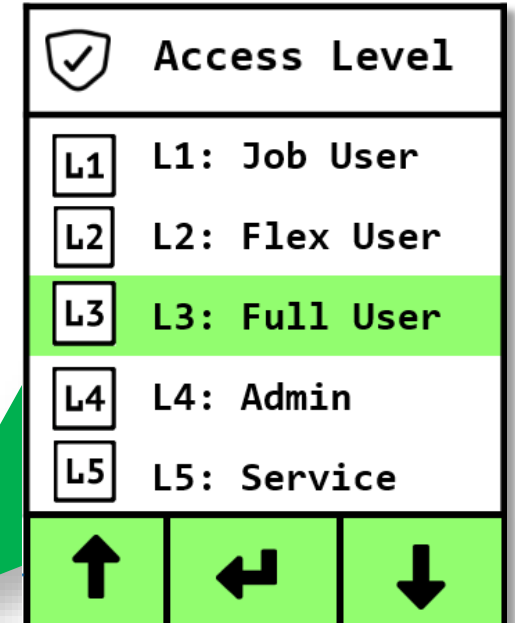
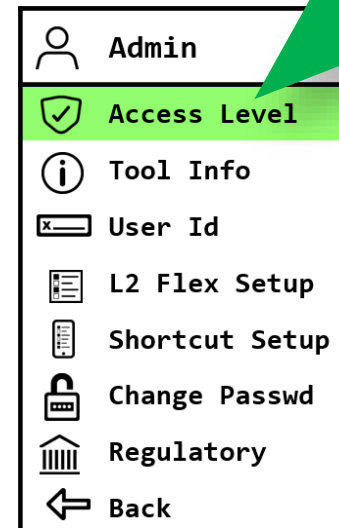
Change Passwd: Admin can change password for all access levels.

Admin Menu

Access Levels

The Tool has 5 password-protected Access Levels:

- ❑ **L5: Service** is reserved for setup and maintenance by HYTORC personnel.
- ❑ **L4: Admin** provides full access to all functions, settings and menu options.
- ❑ **L3: Full User** provides access to all standard tool functions and menu items.
- ❑ **L2: Flex User** provides access to functions and options configured by Admin.
- ❑ **L1: Jobs User** provides access to Jobs and Basic Bolting functions.

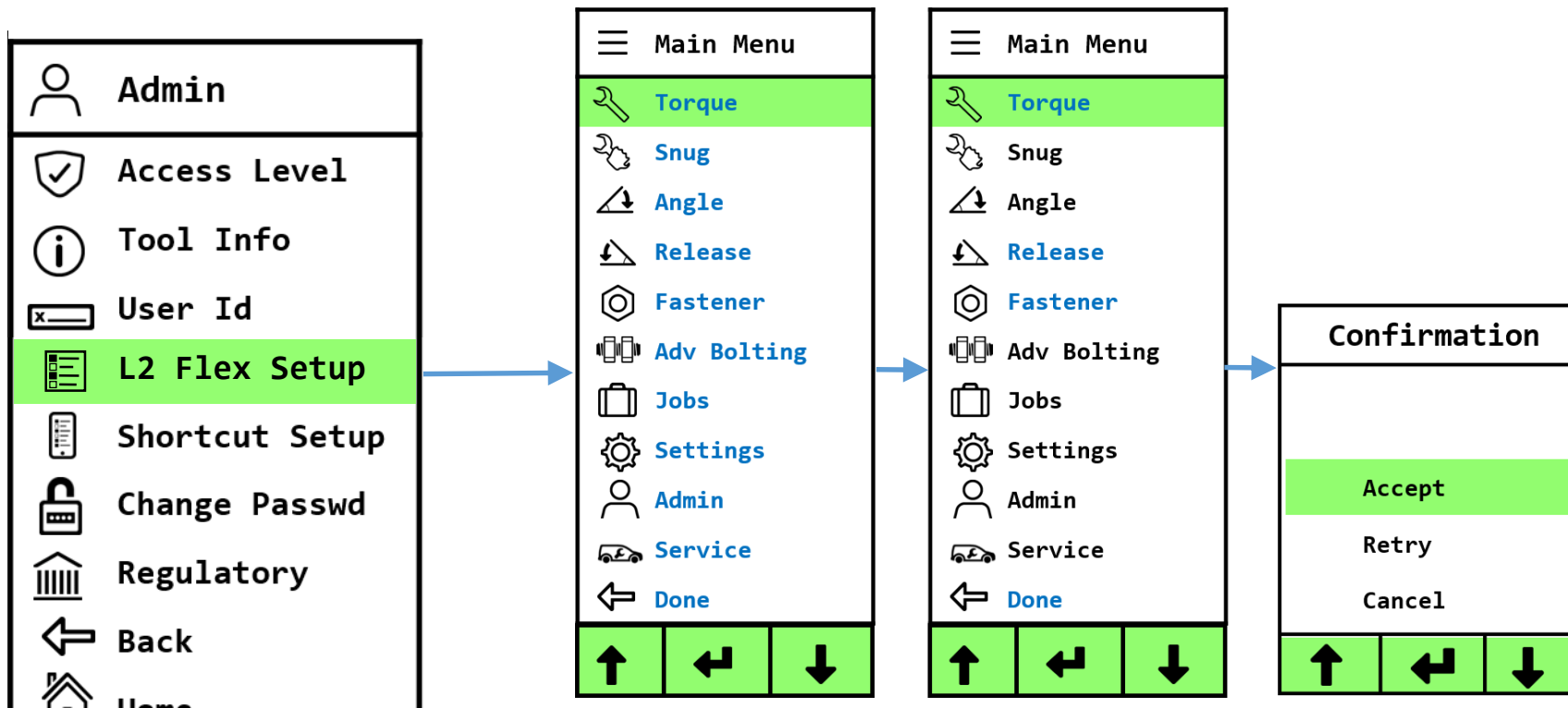


Admin Menu

L2 Flex Setup

The Admin can configure which functions are available to the L2 Flex User.

- ❑ Functions appearing in **blue** are available by default.
- ❑ Scroll to the function and press the middle button to remove.
- ❑ Functions selected for removal turn **black** and will not be available at L2 access level.

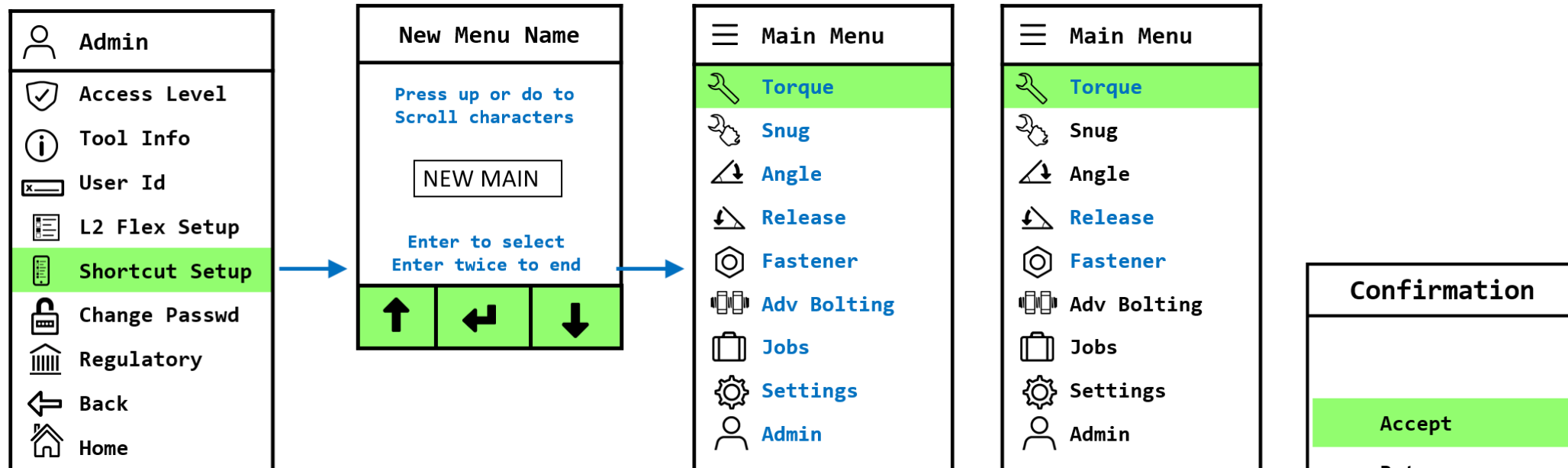


Admin Menu

Shortcut Setup

The Admin can create a customized Shortcut Menu for quick function access.

- ❑ Functions appearing in **blue** are available by default.
- ❑ Scroll to the function and press the middle button to remove.
- ❑ Functions selected for removal turn **black** and will not be included in the Shortcut Menu.
- ❑ The Shortcut Menu appears in place of the Main Menu (the user can switch back to the regular Main Menu at any time).

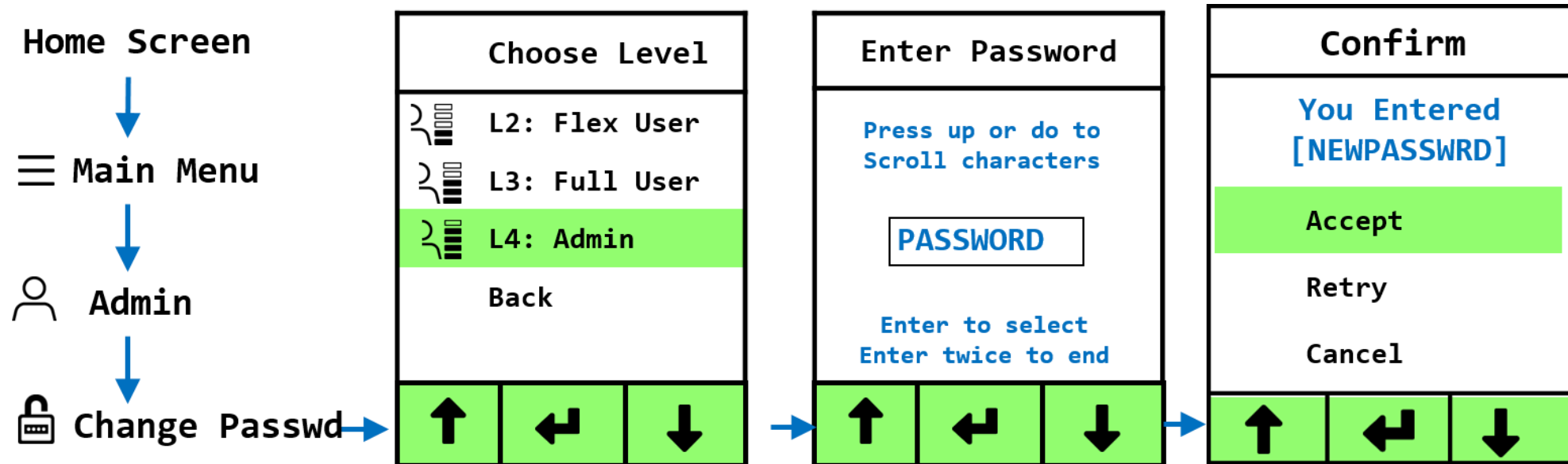



Admin Menu






Change Password

The Admin can change the password for any access level on the tool.

- ❑ Passwords can be up to 8 characters long.
- ❑ Allowable characters are 0 to 9, A to Z, and “_”.



















 **Adv Bolting**


-  Turn Angle
-  Torque Check
-  Rotations
-  Back
-  Home









 **Jobs**


-  Start Job
-  End Job
-  Create Job ID
-  Import Job IDs
-  Export Jobs
-  Delete Jobs
-  Profiles
-  Back
-  Home

 **Settings**

-  Units
-  Clock
-  Bluetooth
-  Torque Limits
-  Angle Limits
-  Angle Delay
-  Beeper
-  Invert Screen
-  Icons
-  Auto-off
-  Button Delay
-  Work Light
-  App Mode
-  Back
-  Home

 **Admin**

-  Access Level
-  Tool Info
-  User Id
-  L2 Flex Setup
-  Shortcut Setup
-  Change Passwd
-  Back
-  Home

 **Service**

- Calibrate Tool
- Edit Cal Table
- Setup Tool
- Diagnostics
- Bluetooth
- Bluetooth Cert
- Serv Interval
- Regulatory
- Diagnostics
- Back
- Home