

HYTORC



LION GUN® X Electric Torque Tool Basic Operations Manual

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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.

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The **LION GUN® X** Electric Torque Tool has built-in data recording, a torque capacity of up to 3,000 ft.-lbs. (4067 Nm) and is powered by a 36V high-density battery pack. Users can record jobs via Bluetooth or USB cable. This tool is compatible with conventional sockets with reaction arms, the HYTORC Washer and the HYTORC Nut.



CASE CONTENTS

- LION GUN X
- Battery pack
- Battery pack charger
- Battery pack charger power cable
- Operations manual
- Standard reaction arm
- Side safety handle
- Calibration certificate
- Data cable
- Compliance and battery books

INSPECTION & 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.
- When not in use, store all tool components, instructions, and calibration certifications in the plastic storage case.
- Modifying any of the components invalidates the warranty.
- Customer/user is responsible for arranging testing and recalibration.
- Contact 800-FOR-HYTORC for assistance or further information. HYTORC recommends all tools be tested and recalibrated periodically. More frequent calibration may be appropriate depending on local practice, usage, and conditions. Check the certificate or label on the tool for the most recent calibration date.

ENVIRONMENTAL CONSIDERATIONS

- The LION GUN X Electric Torque Tool is a 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.

MAINTENANCE

For Maintenance Guidelines see this document in the HYTORC Library - <https://library.hytorc.com/posts/749>

CHARGE THE BATTERY PACK

- The tool comes with the HYTORC Battery Pack Charger (Model: A000791) and one long-life HYTORC 36V battery pack (Model: P003286).
- Connect the charging cradle to the power supply and plug the power cord into a grounded outlet.
- Make sure the power indicator light is green.
- Push button to test battery pack.
- Insert the battery pack by sliding it into the charger and locking it into place.
- 36V battery pack will take approximately 90 minutes to charge.

CHARGING/FAULT INDICATOR

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

TEST THE BATTERY



- The Lithium-Ion battery pack has a long run life and will power the tool at full speed until the battery pack 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.
- Push the TEST button on the side of the battery pack and the LEDs indicate remaining 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



Attach: Align the base of the tool with the rails on the battery pack and slide the battery pack firmly into the handle until you hear (or see) the lock snap in place.



Remove: Press the release button on the battery pack and firmly pull the battery pack off of the tool.

POWER ON & OFF

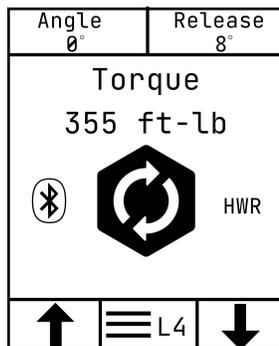
- **On:** Push any button on the rear control panel. The HYTORC logo is displayed for a few seconds while the unit powers up. When the tool is fully powered up, the Home Screen is displayed. A green light indicates that the tool is on.
- **Off:** (3 options)
 - Press center button to go to the Main Menu, scrolls to choose Power Off. **OR**
 - Remove the battery pack from the tool. **OR**
 - From the Home Screen, push and hold center button for 3 seconds.
- 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.

TOOL MODES

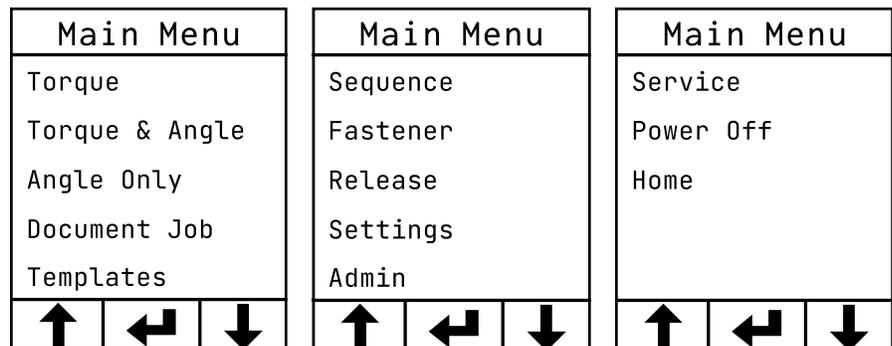
- **TORQUE:** Push directional switch down on right side (past the center position) to set the tool to TORQUE.
- **LOOSEN:** Push directional switch down on the left side (past the center position) to set the tool to LOOSEN.
- **TRIGGER LOCK:** Slide the switch to the middle position. Users will not be able to engage the trigger when the tool is on this setting.

MAIN BOLTING FEATURES

HOME SCREEN

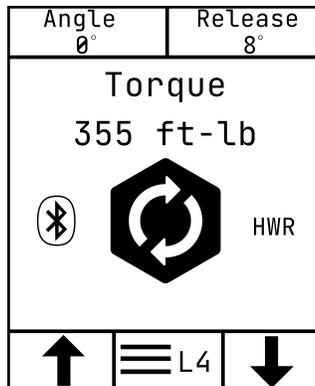


MENU MAP



This is what the screen looks like when the tool is turned on. If it does not, contact 800-FOR-HYTORC for assistance or further information.

BASIC BOLTING OPERATIONS



HOME SCREEN

- The tool direction is displayed on the Home Screen along with TORQUE, ANGLE, RELEASE, FASTENER, and ACCESS LEVEL.
- Only TORQUE can be adjusted from the Home Screen.

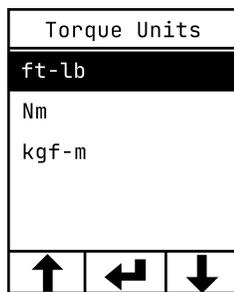
DECREASE TORQUE

- Push the right button (↓) to decrease torque.
- At first the torque value will decrease by increments of 1 ft.-lb. Continuing to hold the right button (↓) will decrease the torque by 10 ft.-lbs. Holding it down even longer will lower the torque by 100 ft.-lbs. until reaching the maximum calibrated capability of the tool.

INCREASE TORQUE

- From the Home Screen, push the left button (↑), to increase torque.
- At first the torque value will increase by increments of 1 ft.-lb. Continuing to hold the left button (↑) down will increase the torque by 10 ft.-lbs. Holding it down even longer will increase the torque by 100 ft.-lbs. until reaching the maximum calibrated capability of the tool.

CHANGE TORQUE UNITS

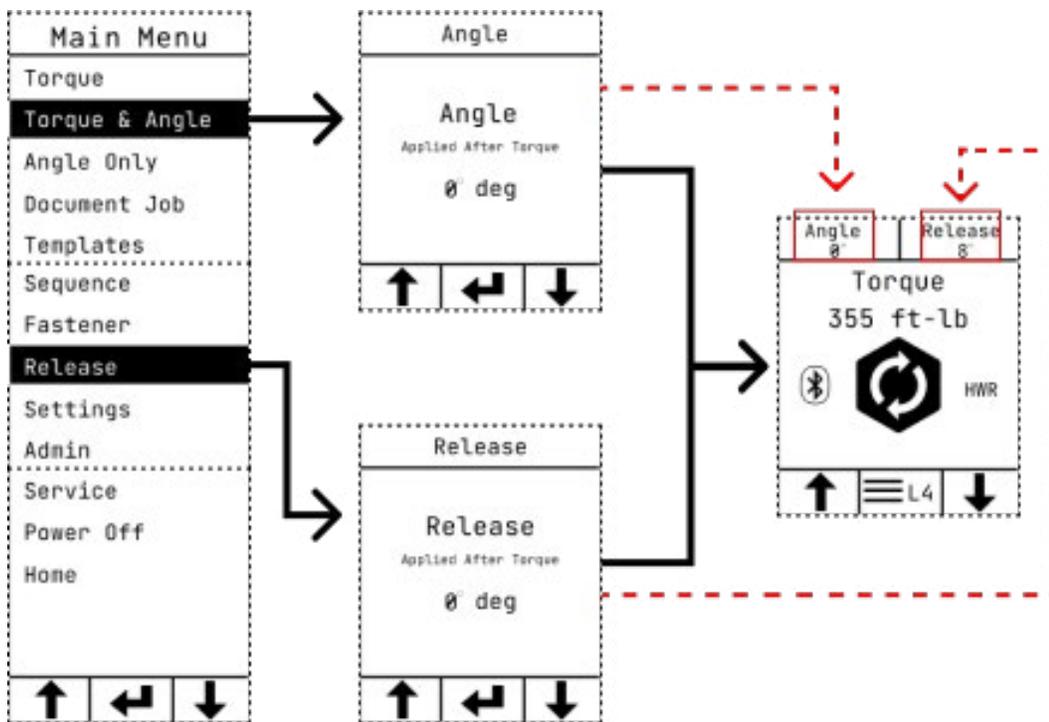


- Go to Main Menu, scroll to Settings, and press center button to choose Units.
- Scroll to desired unit. Push center button to choose unit and it will return to the Home Screen.

CHANGE FASTENER



- The tool drive rotates with either Right Hand (RH) or Left Hand (LH) operations. (RH = clockwise. LH = counterclockwise.)
- The tool is initially set to RH drive, which is the most common direction.
- Go to Main Menu and push center button.
- Scroll to Fastener type and push center button.
- Choose the desired option and push center button to return to the Home Screen.



ADJUST TORQUE & ANGLE

This is used for applications that require turning the fastener through a specified angle in addition to or instead of a specified torque value.

- From Main Menu scroll to the Torque & Angle menu and use center button to select.
- Use the left (↑) and right (↓) buttons to set the desired angle in degrees. Push the center button to set that value and return to the Home Screen.
- On the Home Screen the angle value can be seen in the top left corner.
- The angle will be added to the TORQUE-ANGLE sequence and will activate after the completed torque operation, turning the fastener through the specified angle (up to the maximum output of the tool).
- If an ANGLE DELAY has been set the angle is applied after that specified delay (from 0-3,000ms; default =500ms).

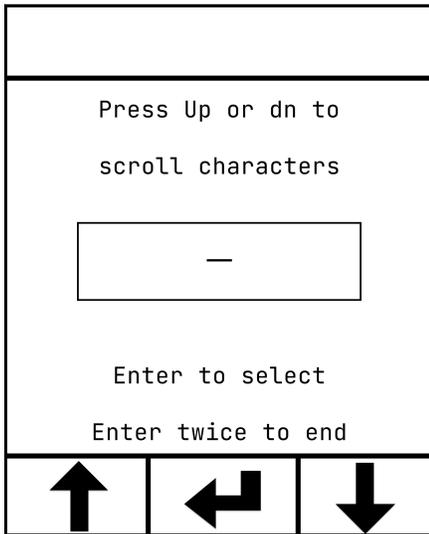
SET RELEASE ANGLE

After the tool completes a tightening operation the gear box may cause the tool to lock onto the nut. When a RELEASE ANGLE is programmed the tool will reverse the motor slightly, taking force off the gear box and reaction point to release the tool without loosening the nut.

- From Main Menu scroll to the Release menu and use center button to select the release angle.
- Use the left (↑) and right (↓) buttons to set the desired release angle. Push the center button to set that value and return to the Home Screen.
- The angle required will vary depending on the application; set the angle to the minimum necessary to release the tool without loosening the nut.
- The RELEASE angle is applied after the TORQUE operation (and ANGLE, if set).
- If an ANGLE DELAY has been set, the release angle will be applied after that specified delay (from 0-3000ms; default = 500ms).

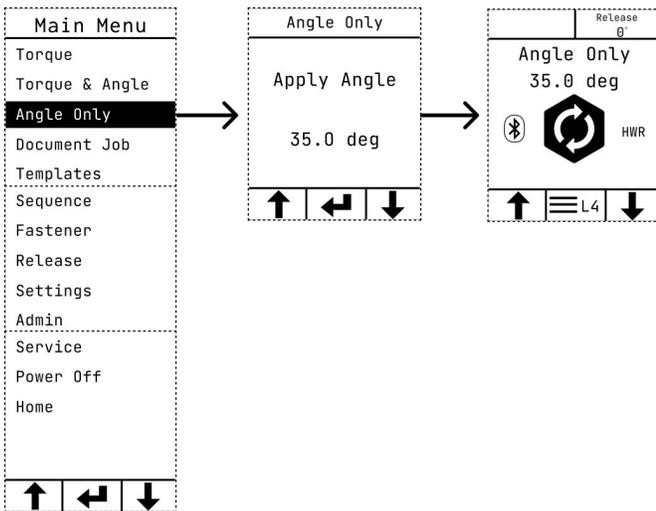
ENTERING CHARACTERS

Use the left (↑) and right (↓) buttons to select character, then press the center button to choose it. Press the center button twice when finished.



ANGLE ONLY

This applies an angle to the bolt after SNUG. It sets an angle for the nut to rotate.

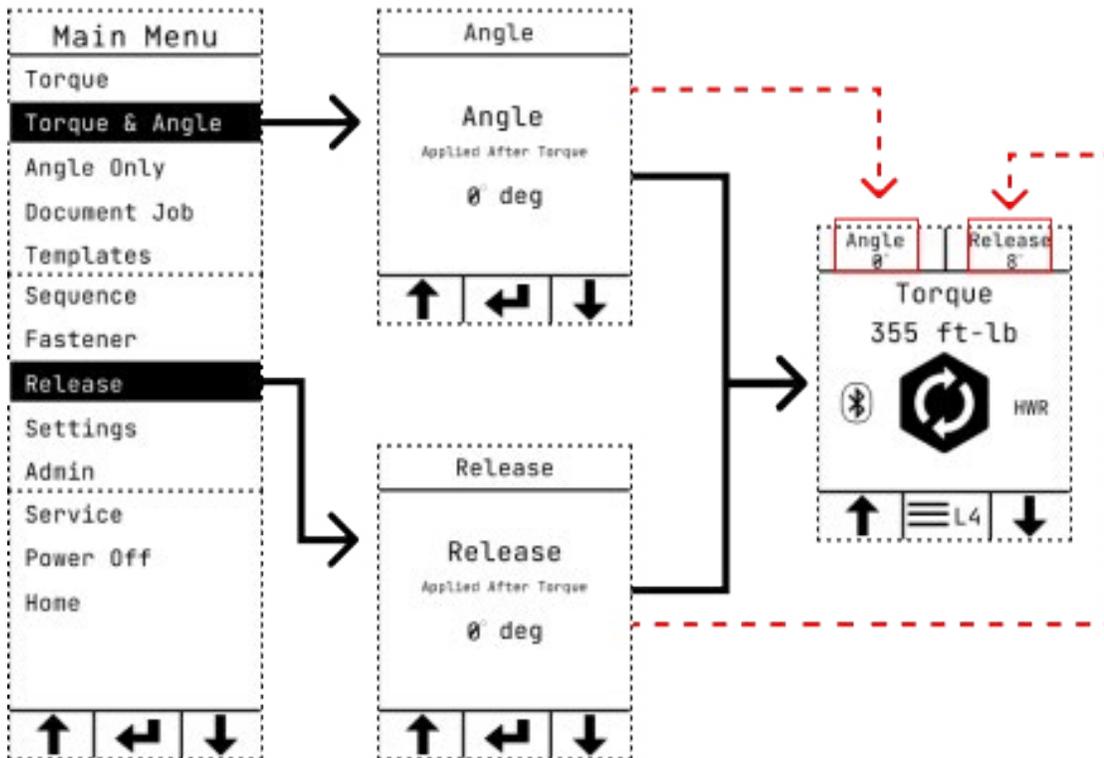


- From the Settings Menu scroll to Angle Only and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.

RELEASE/SET RELEASE ANGLE

(This feature is optional.)

The LION GUN X's gear box relaxes automatically to prevent the tool from locking onto the nut, even when release is set to 0°. When an optional RELEASE ANGLE is set for more than 0° the tool will reverse the motor slightly, taking force off the gear box and reaction point to release the tool.

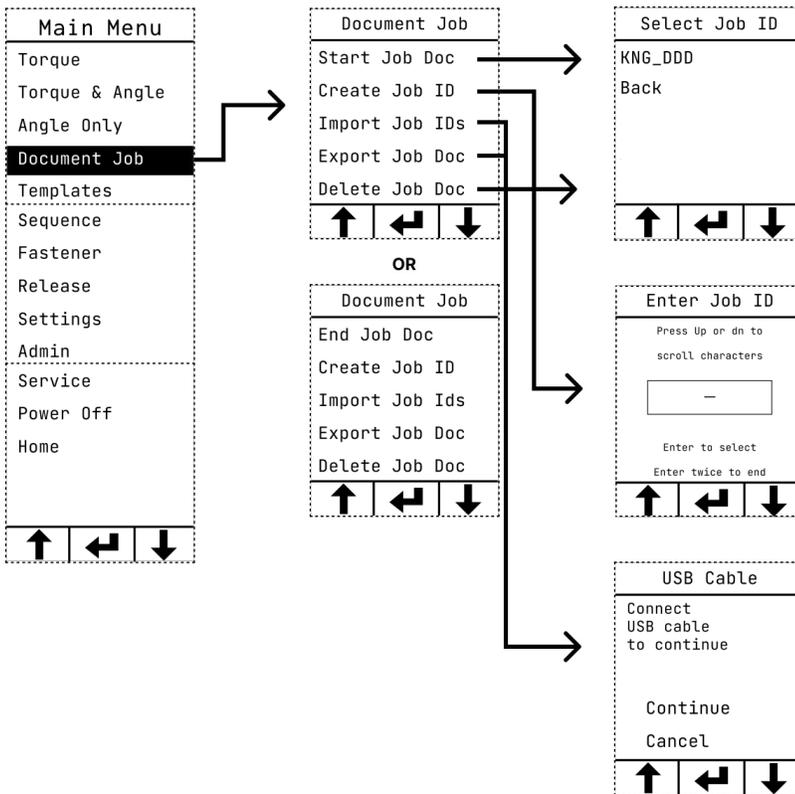


Scroll to the Release menu and use the center button. Use the left (↶) and right (↷) buttons to set the desired release angle. Push the center button to set that value and return to the Home Screen.

- The angle required will vary depending on the application; set the angle to the minimum necessary to release the tool without loosening the nut.
- The optional RELEASE angle is applied after the TORQUE operation (and ANGLE, if set).
- If an ANGLE DELAY has been set, the release angle will be applied after that specified delay (from 0-3000ms; default = 500ms).

DOCUMENT JOB

Documents jobs and saves to the tool's internal memory. That data can later be exported to an app or PC. (While Job Data can be exported from the tool, it cannot be imported into the tool.)



Job ID

- Associates a project with a specific Job ID.
- Use the current Job ID or enter a new one.
- If a Job ID was not set, the prompt will show [NO_JOBID] and this will become the default Job ID.
- A Job ID can be up to 8 characters.

Create Job ID

- From the Document Job Menu scroll to Create Job ID and press the center button to select. Use the left (↑) and right (↓) buttons to select a value and press the center button.

Import Job IDs

- From the Document Job Menu scroll to Import Job ID and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.

Start Job Doc

- From the Document Job Menu scroll to Start Job Doc and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.

Export Job Doc

- From the Document Job Menu scroll to Export Job ID and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.

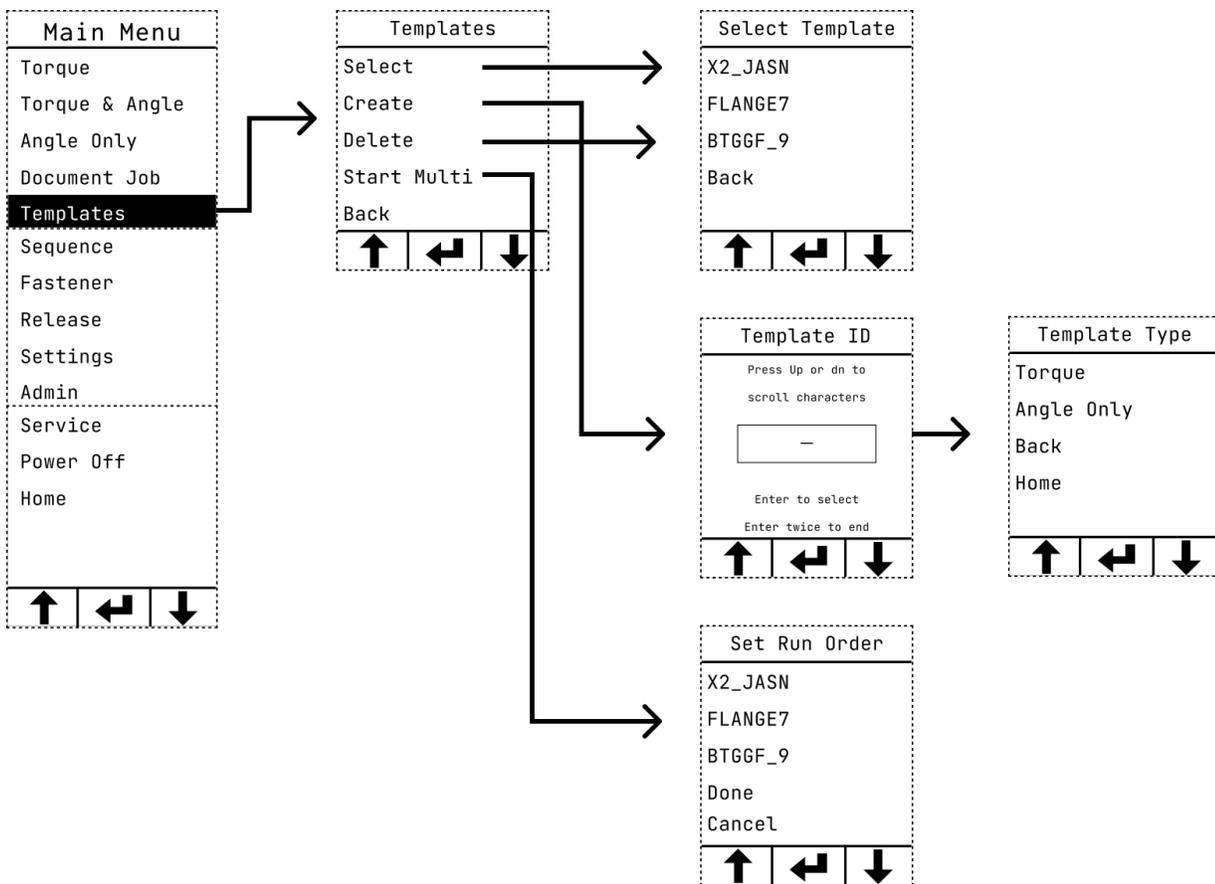
End Job Doc

- From the Document Job Menu scroll to End Job Doc and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.

Delete Job Doc

- From the Document Job Menu scroll to Delete Job Doc and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.

TEMPLATES



Create Template

- From the Templates Menu scroll to Create and press the center button.
- Enter a Template name with the left (↑) and right (↓) buttons. Press the center button again to end and save the Template ID.
- Select a Template Type and enter the appropriate values for that type. There are 2 types — Torque or Angle Only. Then press the center button.

Start Multi

- From the Templates Menu scroll to Start Multi and press the center button.
- Select the template run order from the tool's current saved template list. Select done when finished.

| Set Run Order |
|---------------|
| X2_JASN |
| FLANGE7 |
| BTGGF_9 |
| Back |
| Cancel |
| ↑ ← ↓ |

Select Template Type

- From the Templates Menu scroll to Select and press the center button. Choose a template from the list provided and press the center button.

Delete Template

- From the Templates Menu scroll to Delete Template and press the center button. Choose a template and press the center button.

SEQUENCE

Guides users through a bolting project that has multiple fasteners and applications. The tool displays the count of each successful fastener tightening, number of passes performed, and series of items (such as flanges or wheels). Built-in data recording provides complete and detailed documentation of the project.

User ID

Associates the job with a specific User ID.

- From the Sequence Menu scroll to General/Wheel and press the center button, then scroll to Enter User ID and press the center button to Accept, or create a new User ID.
- The job data still is recorded if no User ID is documented or if the User ID is left blank [].
- There is a 10 character limit. Alphanumeric characters and “_” only.

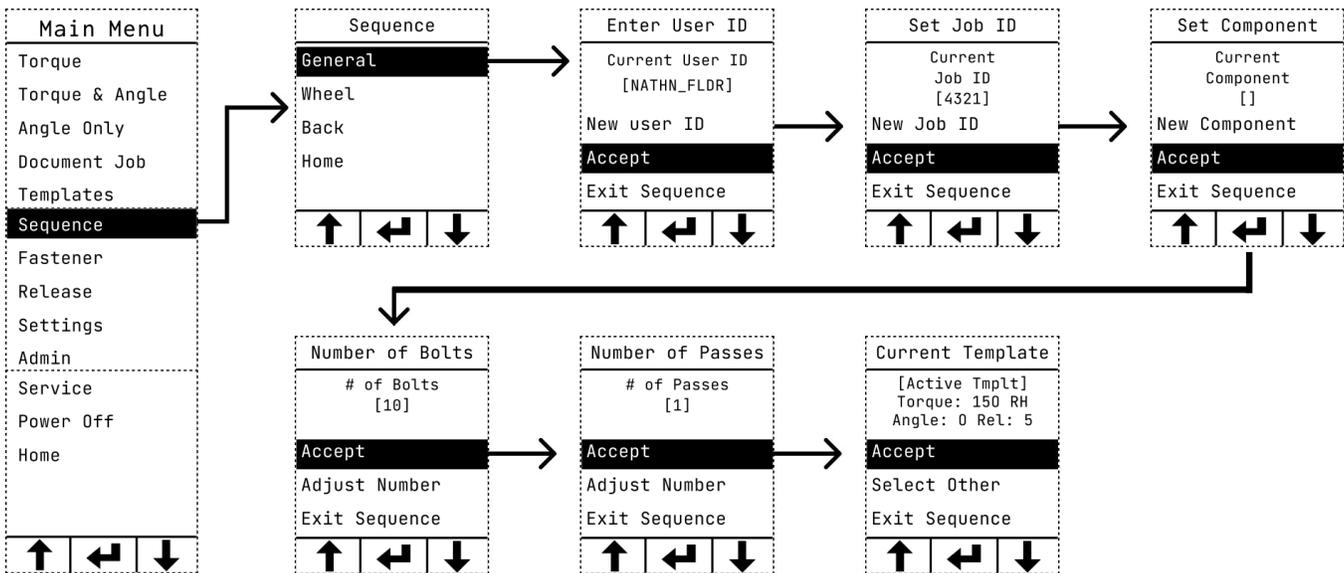
Set Job ID

Associates the job with a specific Job ID.

- From the Sequence Menu scroll to General/Wheel and press the center button, then scroll to Set Job ID and press the center button to Accept, or create a new Job ID.
- There is an 8 character limit. Alphanumeric characters and “_” only.
- If the Job ID is left blank [], it will default to “NO_JOBID.”

General Sequence

- Collects job-related data fields such as User ID, Job ID, Component ID, Number of Bolts, Number of Passes, and Bolting Template.



FROM THE SEQUENCE MENU SCROLL TO GENERAL TO SELECT A VALUE AND PRESS THE CENTER BUTTON. FROM THE SEQUENCE SCREEN YOU WILL BE ABLE TO COMPLETE THE FOLLOWING OPERATIONS.

Component ID (General)

- Select the option to either Accept the current component ID or create a new component and press the center button to confirm selection or Exit Sequence.
- Create a Component:
 - This is an optional documentation field to identify the application being worked on.
 - There is a 10 character limit (Ex: FLANGE_ID).
 - All characters entered will be upper case.
- If a Component ID was not set, the prompt will show empty brackets []. Leaving it blank means this data will not be documented.
- The term "Component" and the Component ID can be changed by the Admin. (See *Edit Sequence Label* section.)

Number of Bolts

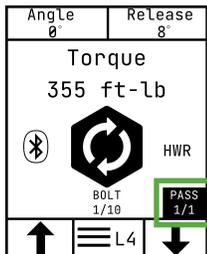
- Enter the Number of Bolts and press the center button to Accept, Adjust Number or Exit Sequence.
- The sequence is defined by the number of bolts on the application.
- Use the current number of bolts or adjust the value between 1 and 100.

Number of Passes

- Enter the Number of Passes and press the center button to Accept, Adjust Number or Exit Sequence.
- Select the number of passes for the bolting operation.
- Use the current number of passes or adjust the value between 1 and 10.

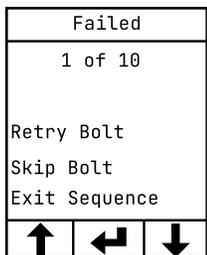
Bolting Template

- Use the current bolting template or set a different one. (See *Creating Template* section.)
- To set a different bolting template, choose Select Other.
- You can select a different bolting template at the start of each pass, even if multiple passes are set for that sequence.



Start Bolting Sequence

- The bolting sequence starts with the first pass and first bolt.
- The tool displays a count of the current pass and current bolt. **(See green box to the left.)**
- The counters advance in real time with each successful tightening as the bolting sequence progresses.



Failed Operation (General)

- If an operation fails you can either Retry Bolt or Skip Bolt.
 - Retry Bolt - redo the tightening on the same bolt without advancing the counter.
 - Skip Bolt - continue to the next bolt, while still advancing the sequence counter.
- All failed operations, retries, and skips are recorded in the documentation data.

| |
|---------------|
| Pass Complete |
| Pass 1 of 1 |
| Continue |
| Retry a Bolt |
| Re do pass |
| Exit Sequence |
| ↑ ← ↓ |

Pass Complete

- At the end of each pass you can:
 - Confirm and proceed with the sequence by selecting Continue.
 - Retry the last bolt.
 - Restart the current pass.
- All Retry operations are recorded in the documentation data.

| |
|-----------------|
| Component Done |
| Component [] |
| Next Component |
| Next Job ID |
| Exit Sequence |
| ↑ ← ↓ |

Component Done

- When all bolts on a component are successfully completed, you can continue onto the next component, start a new job, or exit the sequence.
- Upon exiting, the sequence is terminated, and all counters are reset. The sequence cannot be resumed.

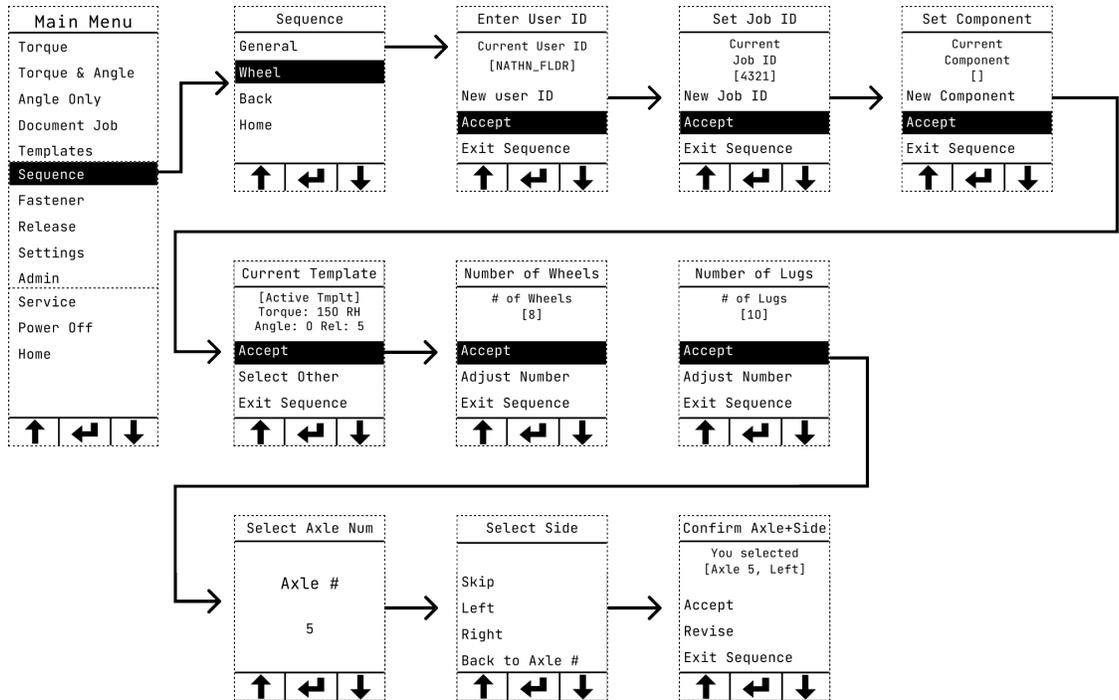
| |
|------------------|
| Exit Sequence |
| Job ID [4321] |
| End Sequence |
| End Job & Seq |
| Back |
| ↑ ← ↓ |

Exit Sequence (General)

- A bolting sequence can be interrupted at any time by pressing the center button.
- There is an option to exit the sequence once a pass or component is complete.
- Once a sequence is terminated all counters are reset and the sequence cannot be resumed.
 - Selecting End Sequence will terminate the current sequence while keeping the Job ID active.
 - Selecting End Job & Seq will terminate the current sequence and end the current JOB ID.

Wheel Sequence

This feature starts by collecting job-related data fields (User Id, Job Id, Vehicle Id, Bolting Template, Number Of Wheels And Number Of Lugs on each wheel). For each wheel, you can indicate the axle number and the side of the vehicle for each wheel.



FROM THE SEQUENCE MENU SCROLL TO WHEEL TO SELECT A VALUE AND PRESS THE CENTER BUTTON. FROM THE SEQUENCE SCREEN YOU WILL BE ABLE TO COMPLETE THE FOLLOWING OPERATIONS.

Set Component/Component ID (Wheel)

- Select the option to either Accept the current component ID or create a new component and press the center button to confirm selection or Exit Sequence.
- Create a Component:
 - This is an optional documentation field to identify the application being worked on.
 - There is a 10 character limit (Ex: FLANGE_ID).
 - All characters entered will be upper case.
- If a Component ID was not set, the prompt will show empty brackets []. Leaving it blank means this data will not be documented.
- The term "Component" and the Component ID can be changed by the Admin. (See *Edit Sequence Label* section.)

Number of Wheels

- Enter the Number of Wheels. Press center button to Accept. Or use left (↑) and right (↓) buttons to Adjust Number and press the center button.
- Use the current number of wheels or adjust the value between 1 and 100.

Number of Lugs

- Enter the Number of Lugs. Press Accept or use the left (↑) and right (↓) buttons to select a value and press the center button.
- Use the current number of lugs or adjust the value between 1 and 100.

Axle Number

- Select Axle Num. Use the left (↑) and right (↓) buttons to select a value and press the center button. There is also an option to Revise the number.
- Select the axle number of the wheel to be serviced on the vehicle. This will be documented in the job data.
- Use the current number of axles or adjust the value between 1 and 5.

Select Side (Wheel Side)

- Select Side or Skip. Use the left (↑) and right (↓) buttons to select a value and press the center button.
- This will be documented in the job data.

Start Wheel Sequence

- Confirm Axle + Side. Use the left (↑) and right (↓) buttons to select a value and press the center button.
- The wheel bolting sequence starts with the first wheel and first lug. The tool displays counters of the current wheel and lugs in the lower right corner.
- The counters advance in real time with each successful tightening during the bolting sequence.
- Loosening operation or unsuccessful bolting does not advance the sequence bolt counter.

| |
|---------------|
| Failed |
| 1 of 10 |
| Retry Lug |
| Skip Lug |
| Exit Sequence |
| ↑ ← ↓ |

Failed Operation (Wheel)

- In the event of a failed operation, there is the option to either Retry Lug or Skip Lug.
- Retry Lug: Redo the tightening on the same lug without advancing the counter.
- Skip Lug: Continue to the next lug, while advancing the sequence counter.
- All failed operations, retries, and skips are recorded in the documentation data.

| |
|----------------|
| Wheel Complete |
| Wheel 1 of 1 |
| Continue |
| Retry a Lug |
| Re do Wheel |
| Exit Sequence |
| ↑ ← ↓ |

Wheel Complete

- At the end of each wheel, you can
 - Confirm and proceed to the next wheel by selecting Continue
 - Retry the last lug
 - Restart the current wheel
- All retry operations are recorded in the documentation data.

| |
|--------------------|
| Exit Sequence |
| Job ID [EVA_02] |
| End Job & Seq |
| Back |
| ↑ ← ↓ |

Exit Sequence (Wheel)

- Interrupt a sequence at any time by pressing the center button.
- Selecting End Job & Sequence will terminate the current sequence and end the active Job ID.
- Once a sequence is terminated, all counters are reset, and the sequence cannot be resumed.

| |
|-----------------|
| Component Done |
| Component [] |
| Next Job ID |
| Exit Sequence |
| ↑ ← ↓ |

Vehicle Done

- The tool can provide a summary with the vehicle and Job ID once all wheels are serviced.
- You can choose to start a new job or exit the sequence.
- On the summary screen scroll to the desired option and press the center button to select.

Exceptions:

- A sequence project is done only when all of the specified number of passes, bolts, and components are successfully completed
- Only successful tightening to the required torque value is counted in a sequence.
- Loosening or under-torqued operations do not advance the sequence counter.
- You have the option to skip or redo a bolt.

SETTINGS

Main Menu

| |
|----------------|
| Settings |
| Units |
| Time/Date |
| Bluetooth |
| Torque Limit |
| Angle Limits |
| Angle Delay |
| Safety |
| Beeper |
| Invert Screen |
| Auto Shutdown |
| Menu Loop |
| Clear Settings |
| Back |
| Home |
| ↑ ↩ ↓ |

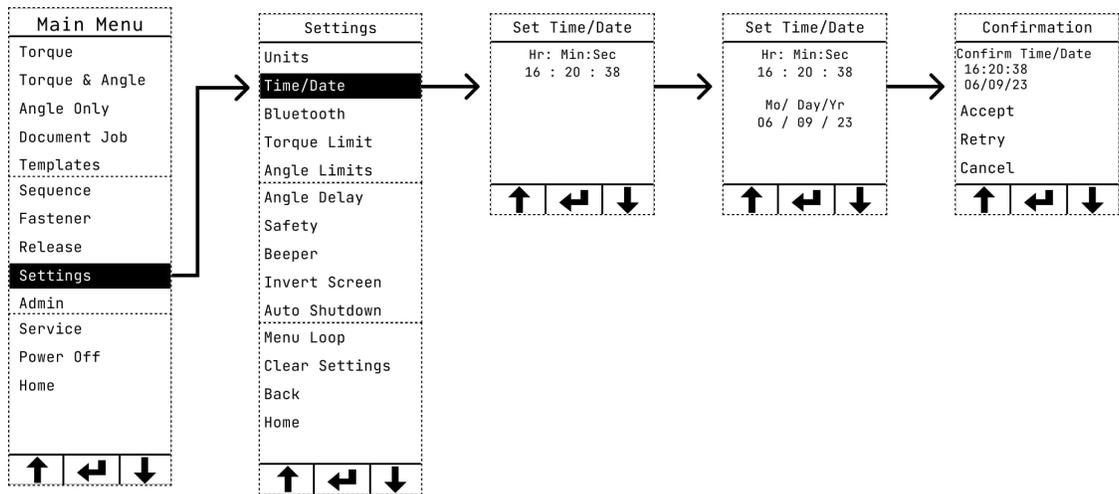
Units

- From the Settings Menu scroll to Units and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.
- Foot pounds (ft.-lbs.), Newton-meters (Nm) or kilogram force meters (kgf-m).

| |
|--------------|
| Torque Units |
| ft-lb |
| Nm |
| kgf-m |
| ↑ ↩ ↓ |

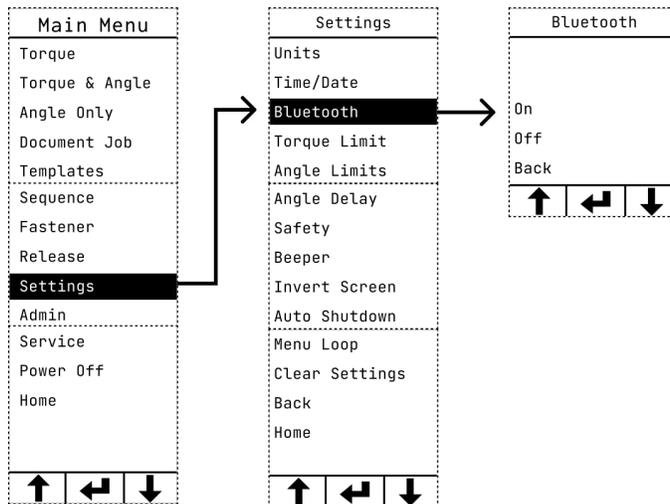
Time & Date

- From the Settings Menu scroll to Time/Date and press the center button. Use the left (↑) and right (↓) buttons to select the time and press the center button to select and move to the next position.
- Use the same method to enter the date.
- Once complete the user can either Accept, Retry or Cancel entry.



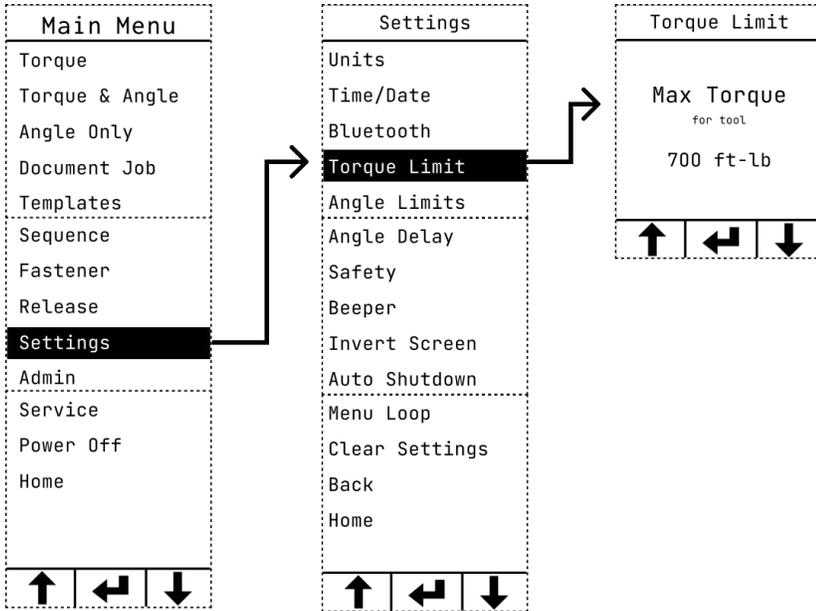
Bluetooth

- From the Settings Menu scroll to Bluetooth and press the center button. Use the left (↑) and right (↓) buttons to select ON/OFF and press the center button.



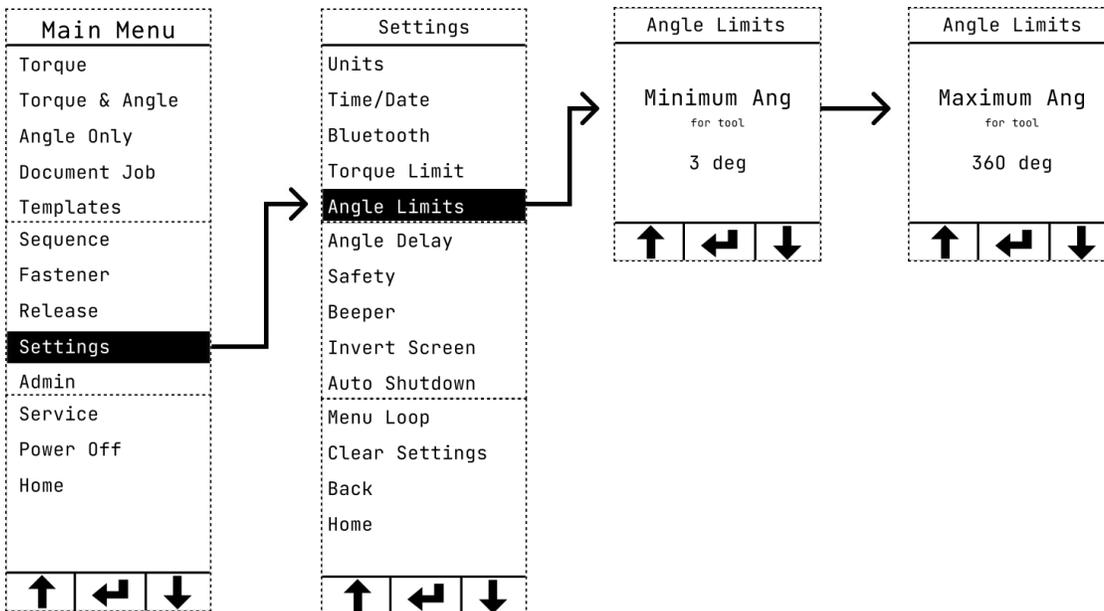
Torque Limit

- From the Settings Menu scroll to Torque Limit and press the center button. Use the left (↶) and right (↷) buttons to select a value and press the center button.
- Limits the available torque range on the tool.



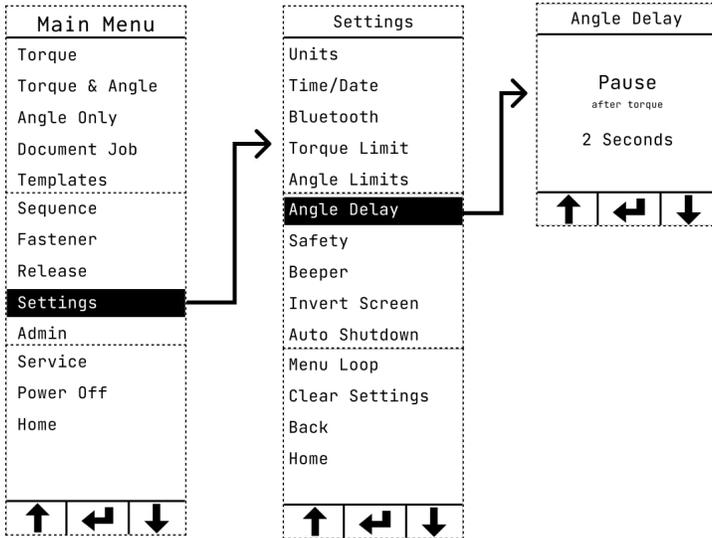
Angle Limits

- From the Settings Menu scroll to Angle Limits and press the center button. Use the left (↶) and right (↷) buttons to select a value and press the center button.
- Limits the Angle operations on the tool.
- The default minimum and maximum angle limits are 0° and 360°. Any angle limits must fall within that range.
- The Angle selected on this screen is always applied in a 'Torque & Angle' sequence within the same trigger event.



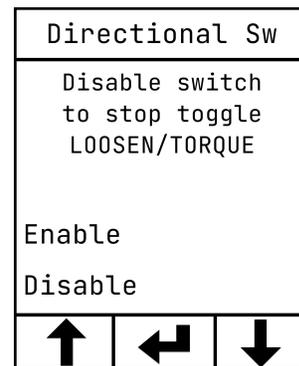
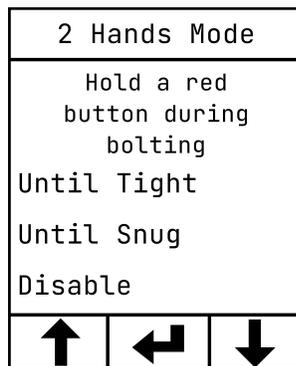
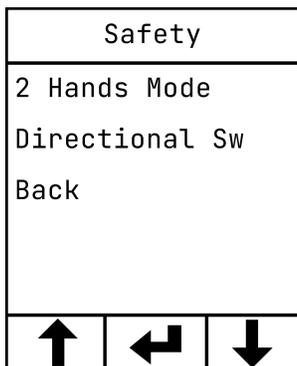
Angle Delay

- From the Settings Menu scroll to Angle Delay and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.
- This is the time delay between Torque, Angle, and Release operations when using Torque & Release, Torque & Angle or Angle & Release options.
- The minimum is 0 and the maximum is 3,000 milliseconds (equivalent to 3 seconds).



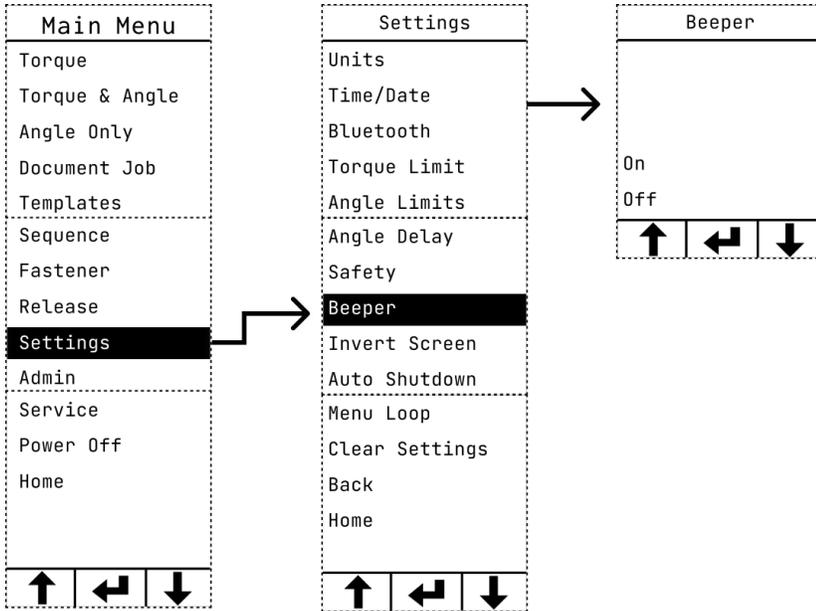
Safety Safety Menu

- From the Settings Menu scroll to Safety and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.
- 2-Handed Mode
 - Use the left (↑) and right (↓) buttons to choose Tight or Snug, or Disable.
 - This safety feature aims to ensure that the operator keeps both hands clear of the reaction arm.
- Directional Switch
 - Use the left (↑) and right (↓) buttons to select Enable/Disable.
 - This allows the user to disable the physical switch that changes the tool mode from LOOSEN and TORQUE.



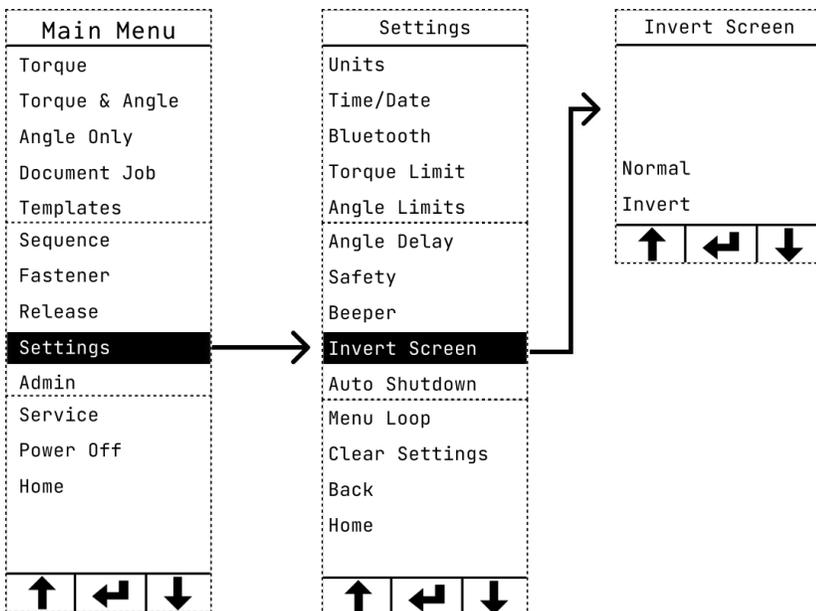
Beeper

- From the Settings Menu scroll to Beeper and press the center button. Use the left (↑) and right (↓) buttons and press the center button to select ON/OFF.
- Turn the beeper on or off.



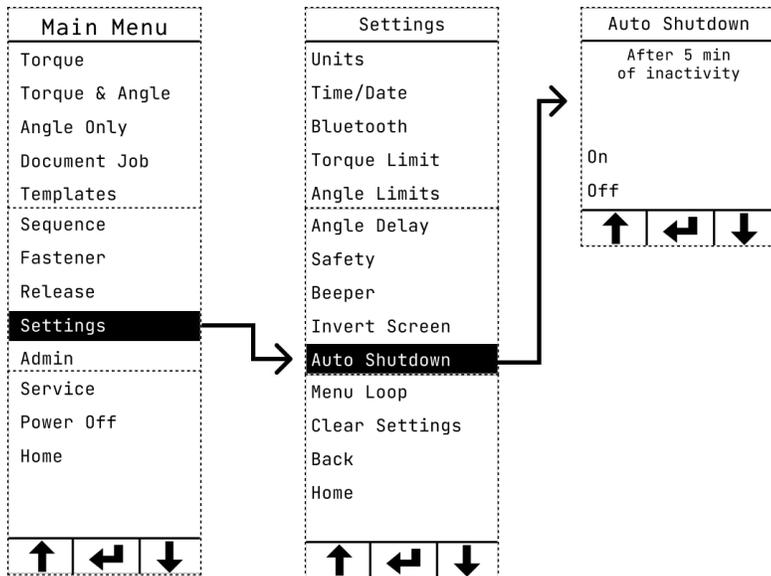
Invert Screen

- From the Settings Menu scroll to Invert Screen and press the center button. Use the left (↑) and right (↓) buttons to select NORMAL/INVERT and press the center button.
- Inverts the LCD screen, turning the display upside down.
- In order to maintain the correct relationship of arrows to buttons, the direction of the arrows are reversed when the screen is inverted.



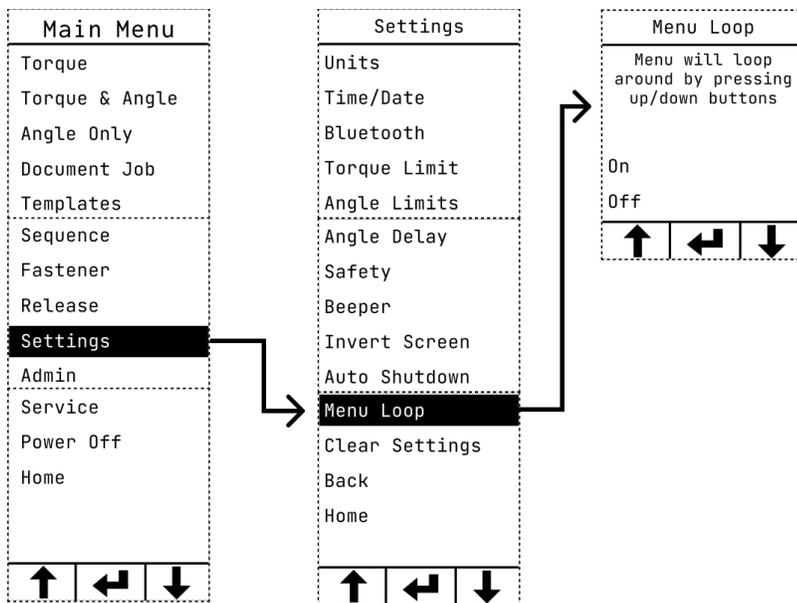
Auto Shutdown

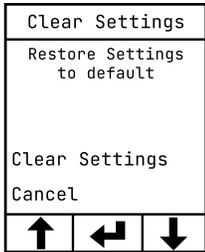
- From the Settings Menu scroll to Auto Shutdown and press the center button. Use the left (↑) and right (↓) buttons to select ON/OFF and press the center button.
- After 5 minutes of inactivity.
- When Auto Shutdown is set to Off the tool will stay on until it is manually turned off or the battery charge runs out.



Menu Loop

- From the Settings Menu scroll to Menu Loop and press the center button. Use the left (↑) and right (↓) buttons to select ON/OFF and press the center button.
- By default menu navigation is set up to scroll from the beginning of the menu (top) to the end (bottom) and then stop. (To reach the beginning, scroll back up.)
- When Menu Loop is on it is possible to scroll continuously through the entire menu without stopping.

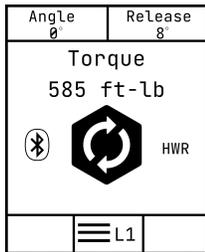
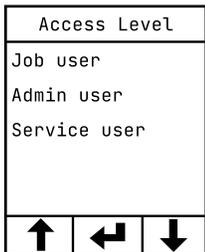




Clear Settings

- From the Settings Menu scroll to Clear Settings and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button
 - The following Settings will be restored to the default upon selection:
 - Units
 - Bluetooth
 - Torque Limit
 - Angle Limits
 - Angle Delay
 - Safety
 - Beeper
 - Invert Screen
 - Auto Shutdown
 - Menu Loop

ADMIN

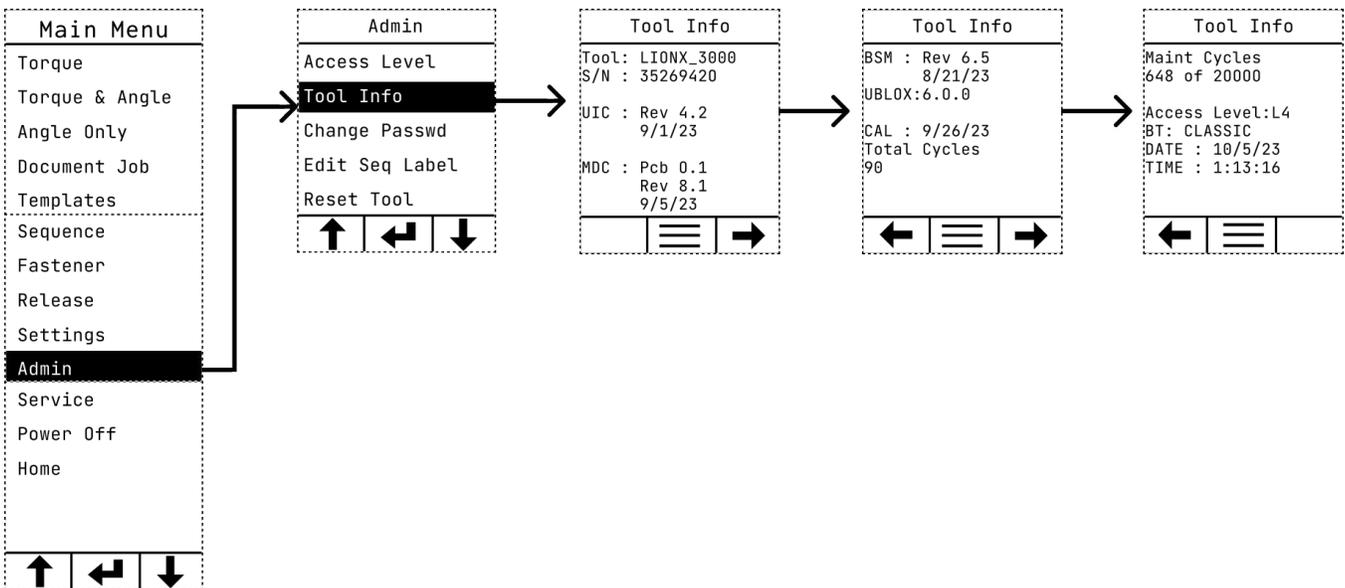


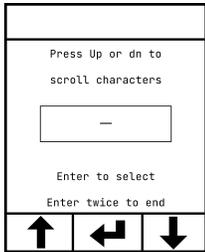
Access Level

- Service User is for HYTORC service personnel only. Cannot be accessed by non-HYTORC users.
- Job User has restricted access. This level only allows the user to pull the trigger and is unable to change the torque or angle values. Operator is limited to using what was already set, or templates that were already made.
- Admin user has access to all tool functionality EXCEPT Service.

Tool Info

- Versions of firmware, cycle count and last calibration date.
- From the Admin Menu scroll to Tool Info and press the center button.
- Scroll right to display more information. Scroll left to go back.



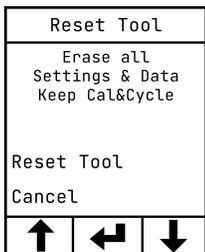
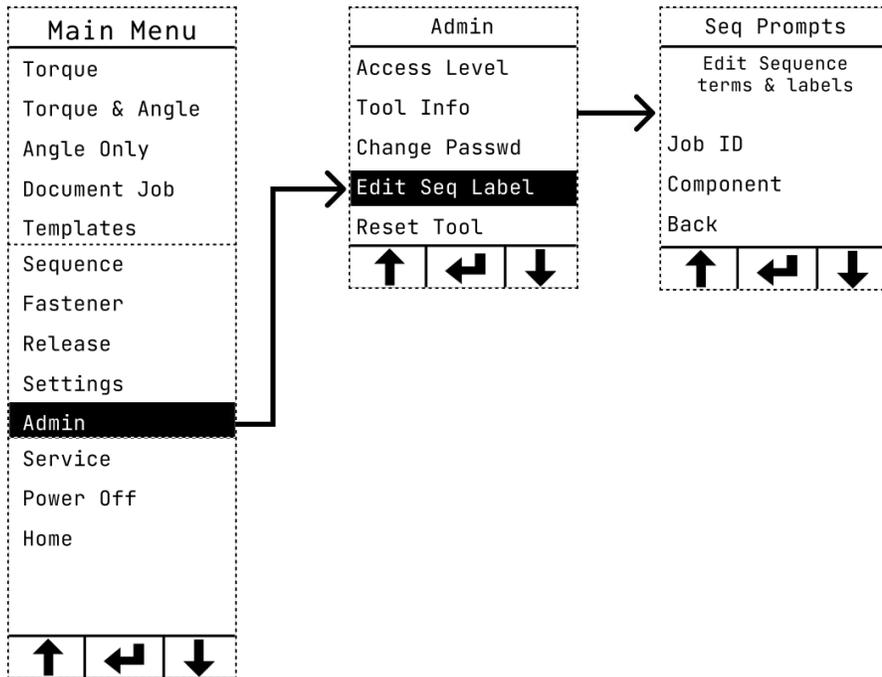


Change Password

- From the Admin Menu scroll to Change Password and press the center button. Use the left (↑) and right (↓) buttons to select a value and press the center button.
- Can only be done by Admin.
- Passwords can be up to 8 characters in length.
- The only allowable characters are 0 to 9, _, and/or A to Z.

Edit Sequence Label

- From the Admin Menu scroll to Edit Seq Label and press the center button. Use the left (↑) and right (↓) buttons to select an option press the center button.
- This Menu Allows the user to change the default Component name and Job ID Without needing to start a sequence.



Reset Tool

- From the Admin Menu scroll to Reset Tool and press the center button. Use the left (↑) and right (↓) buttons to select an option and press the center button.
- Resets tool to factory settings.

SERVICE

HYTORC personnel only. Cannot be accessed by regular users.

ERROR MESSAGES

LGX Job Data Status - Error Codes

| CODE | EXPLANATION | COMMENT |
|------|---------------------------|--|
| OK | Success | Completed operation with the target Torque, Angle, or Rotation reached |
| ETR | Early Trigger Release | Incomplete operation. Target torque or angle not reached |
| MHS | Motor has stalled | Motor failed to spin, typically due to a pre-tightened bolt, or any motor rundown error condition, including component failure |
| LBV | Low Battery Voltage | Battery below cut off voltage |
| MOC | Motor Over Current | Motor shut off for current protection due to mechanical or electrical impediment |
| OT | Over Temperature | Temperature overheating detected |
| COM | Motor Communication Error | Tool internal communication error, probably due to cable or connector issue |
| TLR | Torque Limit Reached | The motor stopped and the operation failed because the operation reached the tool's set Torque Limit (default to maximum) |
| ABT | Aborted for Safety | User aborted the operation during Safety Mode by letting go of the tool's back button |

DATA FIELDS

LGX Data Fields

| # | FIELD | EXPLANATION | FORMAT |
|----|------------------|---|--|
| 1 | Date | Current date | MM/DD/YYYY |
| 2 | Time | Current time | HH:MM:SS |
| 3 | Duration | Length of the operation | Whole number (seconds) |
| 4 | Job ID | Job ID; As entered by the operator or the App | 1 to 8 characters (A-Z, 0-9, _); NO_JOBID for undefined Job ID |
| 5 | Template | Bolting Template | 1 to 8 characters (A-Z, 0-9, _); NO_TMPL for undefined Template |
| 6 | Operation Type | Bolting or Template Type | TAR (Torque Angle Release) RAR (Angle Only) |
| 7 | Torque | Target torque | Whole number (in current Units) |
| 8 | Angle | Additional angle applied after reaching the set torque | Whole number (degree) |
| 9 | Release | Motor release angle | Whole number (degree) |
| 10 | Fastener | Type of fastener | RH (Right Hand), LH (Left Hand), HWR (HYTORC Washer Right), HWL (HYTORC Washer Left), HN (HYTORC Nut) |
| 11 | Units | Measurement Units for the torque | ft-lb, Nm or kgf-m |
| 12 | Torque/Loosen | Operation direction and optimally Rundown speed | T for Torque, L for Loosen |
| 13 | Rotations | Not used | |
| 14 | Result | Operation Status | OK for success or error code: ETR, MHS, LBV, MOC, OT, COM, TLR, PTL, ABT, ERR |
| 15 | FinalTorque | Not used | |
| 16 | Level | Current user access level | L1, L4 or L5 |
| 17 | User ID | Current user ID | 1 to 10 characters (A-Z, 0-9, _) |
| 18 | Comp ID | For General Sequence operation: The Component ID, as entered by the operator | 1 to 10 characters (A-Z, 0-9, _) |
| 19 | Pass_Wheel | For Sequence operation: Current pass or wheel number of total count | Number of number |
| 20 | Bolts_Lugs | For Sequence operation: Current bolt or lug number of total count | Number of number |
| 21 | Axle | For Wheel Sequence operation: Axle number | Whole number |
| 22 | Side | For Wheel Sequence operation: Side of Vehicle | Left or Right |
| 23 | Trigger Torque | Not used | |
| 24 | Min Angle | Not used | |
| 25 | Max Angle | Not used | |
| 26 | Angle Monitoring | Not used | |
| 27 | Breakout Torque | Not used | |
| 28 | Min Torque | Not used | |
| 29 | Max Torque | Not used | |

Notes

1. Unavailable values are skipped with a comma. Example ','
2. Future fields will be appended to end of the data string, after additional comma(s).

INSTALL REACTION ARM



- Slide the reaction arm over the drive while aligning the retainer screw with the spot face (circular indentation) on the spline.
- Tighten the screw to attach the reaction arm.
- Pull firmly on the reaction arm to make sure it is properly 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 onto the drive while aligning the pinhole 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 over it to retain the pin in place.
- Contact your HYTORC rep for more accessory options.

CONVENTIONAL TORQUE SETUP

| Fastener | | |
|--------------|---|---|
| Right Hand | | |
| Left Hand | | |
| HY Washer RH | | |
| HY Washer LH | | |
| Hytorc Nut | | |
| ↑ | ↶ | ↓ |

- Select Fastener type - for conventional torque applications the washer will be Right Hand (RH) or Left Hand (LH).
- Prior to applying torque, position a backup wrench to prevent the back nut from turning during tightening.
- Place the socket on the nut, making sure to fully engage the nut.

CONVENTIONAL TORQUE TIGHTENING

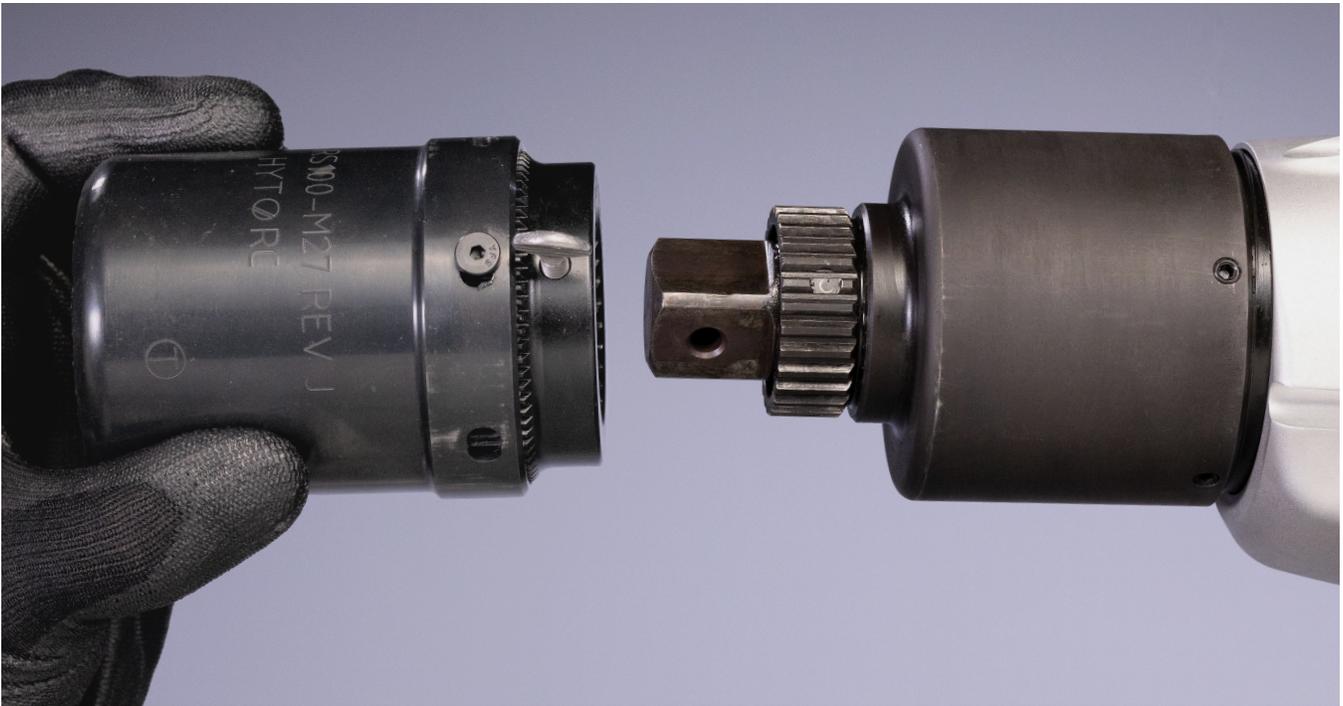
- Push directional switch down on the right side (past the center position) to set the tool to TORQUE.
- Adjust the settings for TORQUE, ANGLE, and RELEASE. These may be adjusted through the menu system described earlier.
- Position the reaction arm against a firm surface. At least 0.5" (12 mm) of the reaction arm must contact a flat surface that can handle the load. Do not place the reaction arm against a round or inclined reaction point. (See your HYTROC rep if you need a reaction arm for a round or inclined surface.)
- Pull and hold the trigger to apply torque. At the same time push and hold **any** button on the rear panel to begin turning the drive. (This ensures that the operator keeps both hands clear of the reaction arm.)
- The tool will then begin applying torque to tighten the nut. Continue holding the trigger until the tool reaches the desired torque and stops.
- If a RELEASE ANGLE is set, the tool will pause after the initial torque. Keep holding the trigger while it completes the specified release angle. After that it will ease off of the nut.
- When using the TORQUE, ANGLE, RELEASE (TAR) function, keep pulling the trigger until the tool stops.
- The screen will show an error message if the attempt was unsuccessful.
- 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.
- Repeat until finished.

CONVENTIONAL TORQUE LOOSENING



- Push directional switch down on the left side (past the center position) to set the tool to LOOSEN.
- When using conventional torque, install a backup wrench to keep the back nut from turning.
- Position the tool over the nut.
- Position the reaction arm against a firm surface. Do not place the reaction arm against a round or inclined reaction point. (See your HYTROC rep if you need a reaction arm for a round or inclined surface.)
- Pull and hold the trigger **and** any button on the rear panel. (This ensures that the operator keeps both hands clear of the reaction arm.)
- The tool will then begin applying torque to loosen the nut.
- Repeat until finished with bolting applications.

INSTALL THE HYTORC WASHER DRIVER



- Identify the appropriate size of HYTORC Washer Driver.
- Slide the Washer Driver over the square drive and spline while aligning the retainer screw with the spot face (circular indentation) on the spline.
- Tighten the retainer screw to secure the driver. (For longer term use HYTORC recommends pinning the drive to the square drive.)
- Pull firmly on the Washer Driver to make sure it is securely attached.
- Contact your HYTORC rep for more accessory options.

TIGHTEN WITH THE HYTORC WASHER DRIVER



- Select the desired TORQUE, ANGLE, and RELEASE.
- Set the Fastener type to HY WASHER (RH or LH).
- 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 a RELEASE ANGLE is set, the tool will pause after the initial torque. Keep holding the trigger while it completes the specified release angle. After that it will ease off of the nut.
- When using the TORQUE, ANGLE, RELEASE (TAR) function, keep pulling the trigger until the tool stops.
- The screen will show an error message if the attempt was unsuccessful.
- 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 beep audibly upon completion of the operation.
- If torque is 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 tightening operation.

LOOSEN WITH THE HYTORC WASHER DRIVER



- Push directional switch down on the left side (past the center position) to set the tool to LOOSEN.
- Position the driver over the nut and HYTORC Reaction Washer and hold the trigger.
- 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.
- Repeat until finished.

INSTALL THE HYTORC NUT DRIVER



- Identify the appropriate size HYTORC Nut Driver.
- Slide the Nut Driver over the square drive and spline while aligning the retainer screw with the spot face (circular indentation) on the spline.
- Tighten the retainer screw on the square drive to secure Nut Driver to the tool.
- Tighten the retainer screw to secure Nut Driver.
- Pull firmly on the Nut Driver to make sure it is securely attached.

TIGHTEN WITH THE HYTORC NUT



- Select the desired torque and set the Fastener type to HYTORC Nut.
- Position the tool over the HYTORC Nut.
- Pull the trigger until the tool stops at the specified torque.
- 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 beep audibly upon completion of the operation
- If a RELEASE ANGLE is set, the tool will pause after the initial torque. Keep holding the trigger while it completes the specified release angle. After that it will ease off of the nut.
- When using the TORQUE, ANGLE, RELEASE (TAR) function, keep pulling the trigger until the tool stops.
- The screen will show an error message if the attempt was unsuccessful.
- Then the tool can be released from the nut.
- If torque is 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 tightening operation.
- Repeat until finished.

LOOSEN WITH THE HYTORC NUT

- Push directional switch down on the left side (past the center position) to set the tool to LOOSEN.
- Position the driver over the HYTORC Nut and hold the trigger until the nut is loose.
- During operation, the status light will turn amber.
- Repeat until finished.

05/2023 - First edition.

09/13/2023 - Emissions removed from section 2, photography updates, thorough changes to data, diagrams, and screens. Edits to section 5. Per Mike Shannon, PM will open a new request with Marketing for any future changes

09/21/2023 - Added section (Menu Navigation) after page 5.

10/13/2023 - Added new menu section pages 7-22. Added new hero shot of LION GUN® X on page 1. Removed torque and angle on page 5.

10/17/2023 - Text and syntactic edits throughout.

10/18/2023 - Graphics for pages 9 and 10 fixed by PMAT. Higher resolution output file to remedy disappearance of thin rules in graphics. Formatting changes made to eliminate need for extra blank pages.

10/19/2023 - Bulleted line item edited under User ID on page 11; strikethrough text under Bluetooth on page 16; copy edit under Beeper on page 19. Errant typos fixed. Final approval received for print.



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