OPERATOR'S MANUAL

Norbar Torque Tools

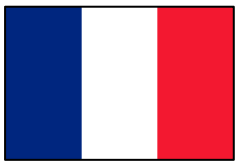
PROTRONIC® PLUS

PROTRONIC® PLUS 10 & 30

PROTRONIC® PLUS SCREWDRIVER

Part Number 34481 | Issue 2 | Original Instructions (English)

For the most up-to-date version of the Operators Manual please visit
https://www.norbar.com/Portals/0/NorbarProducts/operators_handbook/34481.pdf



Pour obtenir la version la plus récente du manuel technique, veuillez vous rendre sur
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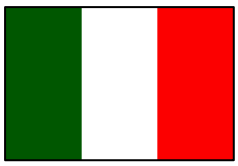

Per la versione più aggiornata del manuale di istruzioni, visitare il sito
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Para la mayoría de las versiones más actuales del manual de funcionamiento, visite
https://www.norbar.com/Portals/0/NorbarProducts/operators_handbook/34481ES.pdf

CONTENTS

PART NUMBERS COVERED BY THIS MANUAL

This manual covers the set up and use of Norbar ProTronic® Plus s listed below.

ProTronic® Plus:

Part Number	Description	Torque Range (N·m)
130512	ProTronic® Plus Model 100 ⅜" sq. dr.	5 – 100
130513	ProTronic® Plus Model 100 ½" sq. dr.	5 - 100
130514	ProTronic® Plus Model 200 ½" sq. dr.	10 - 200
130515	ProTronic® Plus Model 340 ½" sq. dr.	17 - 340
130516	ProTronic® Plus Model 800 ¾" sq. dr.	40 - 800

ProTronic® Plus 10 & 30:

Part Number	Description	Torque Range (N·m)
130522	ProTronic® Plus Model 10 ¼" sq. dr.	0.5 - 10
130523	ProTronic® Plus Model 30 ¼" sq. dr.	1.5 - 30

ProTronic® Plus Screwdriver:

Part Number	Description	Torque Range (N·m)
130524	ProTronic® Plus Model 9 ¼" Female Hex	0.45 - 9

IMPORTANT SAFETY INSTRUCTIONS

WARNING: RISK OF FLYING PARTICLES.

OVER-TORQUING CAN CAUSE BREAKAGE. AN OUT OF CALIBRATION ANGLE CAN CAUSE PART OR TOOL BREAKAGE. BROKEN HAND TOOLS, SOCKETS OR ACCESSORIES CAN CAUSE INJURY. EXCESS FORCE CAN CAUSE CROWFOOT OR FLARE NUT SLIPPAGE.

- Read **this manual completely before using ELECTRONIC TOOL.**
- To ensure accuracy, work must not move in angle mode.
- For personal safety, and to avoid tool damage, follow good professional and fastener installation practices.
- Periodic recalibration is necessary to maintain accuracy.

- **Wear safety goggles, user and bystanders.**
- Be sure all components, including all adaptors, extensions, drivers and sockets are rated to match or exceed torque being applied.
- Observe all equipment, system and manufacturer's warnings, cautions and procedures when using this tool.
- Use correct size socket for fastener.
- Do not use sockets showing wear or cracks.
- Replace fasteners with rounded corners.
- **To avoid damaging tool:** Never use tool with power off. Always turn ON tool so applied torque is being measured.

- Do not press **POWER** ⏻ while torque is applied or while tool is in motion.
- Never use this tool to break fasteners loose.
- Do not use extensions, such as a pipe, on handle of tool.
- Check that tool capacity matches or exceeds each application before proceeding.
- When using negative offsets, verify maximum targets are not exceeded.
- Verify calibration if dropped.
- Make sure ratchet direction lever is fully engaged in correct position.
- Verify calibration of tool if you know or suspect its capacity has been exceeded.
- Always adjust your stance to prevent a possible fall should something give while using tool.
- Do not attempt to recharge alkaline or lithium cells.
- Store tool in dry place.
- Remove batteries when storing tool for periods longer than 3 months.

WARNING: **ELECTRICAL SHOCK HAZARD.**

ELECTRICAL SHOCK CAN CAUSE INJURY.
METAL HANDLE IS NOT ISOLATED.

DO NOT USE ON LIVE ELECTRICAL CIRCUITS.

IMPORTANT: **SAVE THESE INSTRUCTIONS**

Disclaimer:
Operation of ProTronic® Plus is not warranted in an EU member state if operating instructions are not in that State's language.

SPECIFICATIONS

Tool Head Types:

Plus: Square drive 72 or 80 teeth and fixed ratchet
16mm Male Spigot (except model 800)

10 & 30: Square drive 72 teeth and fixed ratchet
Fixed square drive

Screwdriver: ¼" Hex female

Display:

Display Type:
Dot Matrix LCD (192 x 65 Resolution) – Plus
Dot Matrix LCD (168 x 48 Resolution) – 10 & 30 and Screwdriver

Viewing Direction: 6:00

Backlight: White (LED)

Sealed Button Pad

POWER - ON/OFF and torque and angle re-zero

ENTER - measurement mode select and menu entry

UP - increases torque and angle settings and menu navigation

DOWN - decreases torque and angle settings and menu navigation

UNITS - units select (lbf·ft, lbf·in, N·m, kgf·m, kgf·cm, dN·m) and enter PSET (pre-set) menu

LCD BACKLIGHT – Illuminates all screens and last peak torque or angle recall

Functions

- Set - torque or angle target
- Track - real time display of torque or accumulated angular rotation with progress lights
- Peak Hold – 5 sec. flashing of peak torque or alternating peak torque/angle on release of torque
- Peak Recall - display last peak torque or peak torque/angle on button press
- Memory - display of last 1500 peak torque or peak torque/angle readings

Accuracy

Temperature: @ 22°C (72°F)

Angle:

Plus: Angle: ±1% of reading ±1° @ Angular Velocity > 10°/sec < 180°/sec

10 & 30: Angle: ±1% of reading ±1° @ Angular Velocity > 10°/sec < 180°/sec: ±2 degrees @ ≤ 90, ±3 degrees @ > 90º and ≤ 180º

Screwdriver: Angle: ±1% of reading ±1° @ Angular Velocity > 10°/sec < 180°/sec: ±2 degrees @ ≤ 90, ±3 degrees @ > 90º and ≤ 180º

Torque:

CW	CCW	
±2%	±2%	when operating between 20% to 100% of tool capacity
±4%	±4%	when operating between 5% to 19% of tool capacity, except for the ProTronic® Plus 10, 30 and Screwdriver where the counter clockwise accuracy between 5% to 19% will be 6%

Operating Temperature: 0°F - 130°F (-18°C to 54°C)

Storage Temperature: 0°F to 130°F (-18°C to 54°C)

Measurement Drift: ANGLE: -0.12 Angular Degrees per Degree C

TORQUE: +0.01% of reading per Degree C

Humidity: Up to 90% non-condensing

Battery: Three "AA" Lithium Cells, up to 40 hours continuous operation - Plus

Single “AA” Lithium Cell, up to 20 hours continuous operation - 10 & 30 and Screwdriver

Alkaline or rechargeable NiMH batteries may be used (exceeds ASME battery life requirement of 10 hours continuous operation).

Default Auto Shut-off: After 2 minutes idle – (Adjustable, see Settings)

Static Dissipative (ESD) Properties: Surface Resistivity 10^7 – 10^{10} (Screwdriver only)

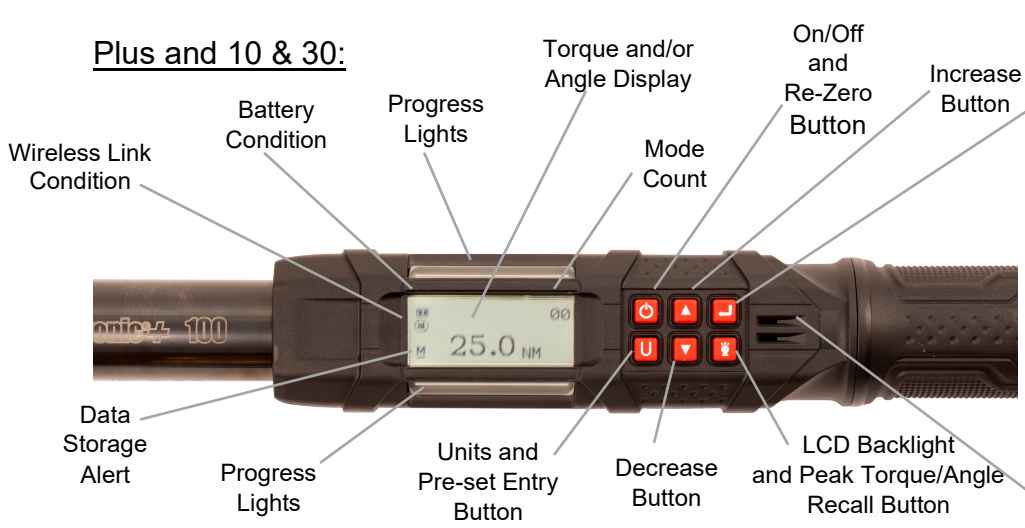
Dimensions: Length / Weight

Plus	Length (mm)	Weight (kg)	Square Drive
130512	458	1.15	⅜”
130513	462	1.30	½”
130514	650	1.65	½”
130515	749	1.85	½”
130516	1,264	4.95	¾”
10 & 30	**Length (mm)**	**Weight (kg)**	**Square Drive**
130522	282	0.39	¼”
130523	298	0.42	¼”
Screwdriver	**Length (mm)**	**Weight (kg)**	**Female Hex**
130524	190	0.21	¼”

USER INSTRUCTIONS

Basic Functions (Quick Start)

Plus and 10 & 30:



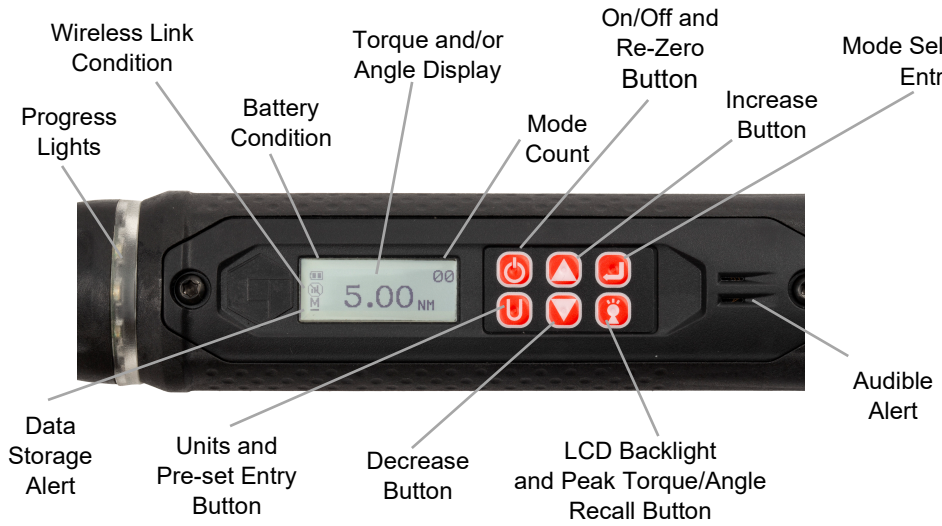
Progress Lights:

Yellow: First light indicates 40% of target torque or angle reached, Second indicates 60% of target reached, Third indicates 80% of target reached.

Green: Indicates target torque or angle reached.

Red: Indicates exceeded torque or angle target +4% or exceeded maximum pre-set target.

Screwdriver:



Progress Lights:

Yellow: ½ second on/off flashing indicates 40% of target torque or angle reached. ¼ second flashing indicates 60% of target reached. Continuous on indicates 80% of target reached.

Green: Indicates target torque or angle reached.

Red: Indicates exceeded torque or angle target +4% or exceeded maximum pre-set target.

Tool Power on Sequence

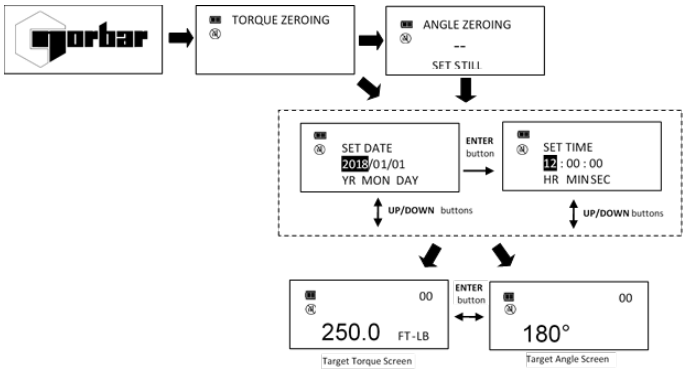
NOTE: Do not turn on tool while torque is applied, otherwise torque zero offset will be incorrect and tool will indicate a torque reading when torque is released. If this occurs, re-zero tool by momentarily pressing POWER button while tool is vertical on a stable surface with no torque applied.

1. Turn on Tool.

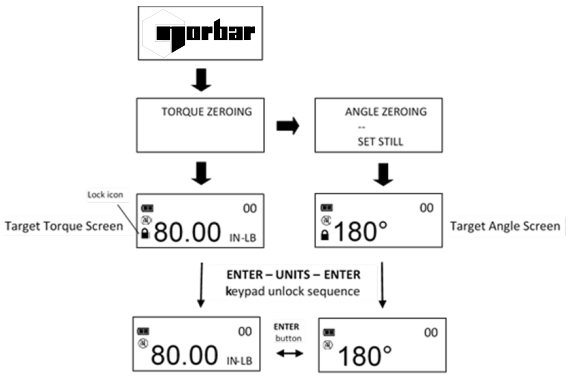
   Hold tool steady in a vertical position, momentarily press **POWER** button. Norbar logo will be displayed followed by torque and angle re-zeroing screens (if angle mode has been previously selected). If real-time-clock has not been set, date and time entry screens are displayed (see Configuration section for entering date and time). After entering date and time or if time has been previously set, target TORQUE or ANGLE screen will now be displayed depending on previous measurement mode selected.

NOTE: By simultaneously pressing the ENTER and UNITS U buttons, the keypad can be locked to prevent inadvertent button presses while griping the SCREWDRIVER body. The Lock Icon is displayed when the keypad is locked. To unlock the keypad, press the ENTER – UNITS U – ENTER buttons in sequence.

NOTE: If the keypad was locked when powered down, on power up, the keypad will remain locked and will require the keypad unlock button sequence of ENTER – UNITS U – ENTER to become functional again.



Plus



10 & 30 and Screwdriver

2. Select Measurement Mode.

   Toggle between target TORQUE and ANGLE screens by repeatedly pressing **ENTER** button.

NOTE: When date and time is set for first time, In-Service date is also set and is used for calculating initial calibration interval (see "Setting Calibration Interval" in Configuration section).

NOTE: If tool is powered up in torque only measurement mode, angle is not zeroed until mode is changed to angle measurement mode, at which time torque and angle zeroing begins automatically after 2 seconds. Tool should be placed vertically on a stable surface with no torque applied.

NOTE: Pressing ENTER button while angle is zeroing will abort zeroing function to allow user to select another measurement mode.

Torque Mode

1. Set Target.

   Use **UP** ▲ **/DOWN** ▼ buttons to change TORQUE target value.

2. Select Units of Measure.

   Repeatedly press **UNITS** **U** button while on target TORQUE screen until desired units are displayed.

3. Apply TORQUE.

   Grasp centre of handle and slowly apply torque to fastener until progress lights display green and a ½ second audible alert and handle vibration alerts you to stop.

4. Release TORQUE.

   Note peak TORQUE reading flashing on LCD display for 5 seconds. Pressing **BACKLIGHT** button while peak torque is flashing will continue to display value until button is released. Momentarily pressing **UP** ▲ **/DOWN** ▼**, ENTER** ↵ or **UNITS** **U** button will immediately return to target TORQUE screen. Reapplying TORQUE will immediately start another TORQUE measurement cycle.

5. Recall Peak TORQUE Reading

   To recall last peak TORQUE measurement, press and hold **BACKLIGHT** button for approximately 3 seconds. Peak TORQUE will flash for 5 seconds.

Angle Mode

NOTE: When angle measurement mode is selected for first time following a power on, "ANGLE ZERO REQUIRED" message is displayed. After two seconds angle zero process begins and tool must be placed on a stable surface. If ENTER ↵ button is pressed before two seconds to change to torque only mode, angle zero process is skipped.

1. Set target.

   Use **UP** ▲ **/DOWN** ▼ buttons to change target ANGLE value.

2. Apply Torque and Rotate Tool.

   Grasp centre of handle and slowly apply torque to fastener and rotate tool at a moderate consistent speed until progress lights display green and a ½ second audible alert and handle vibration alerts you to stop.

3. Release torque.

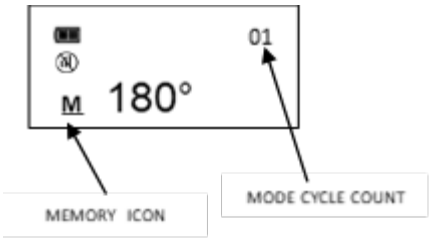
   Note alternating peak TORQUE and ANGLE readings flashing on LCD display for 5 seconds. Pressing **BACKLIGHT** button while peak values are flashing will continue to display values until button is released. Momentarily pressing **UP** ▲ **/DOWN** ▼**, ENTER** ↵ or **UNITS** **U** button will immediately return to target ANGLE screen. Reapplying torque (ratcheting) before target screen is displayed will continue ANGLE accumulation as tool is rotated.

4. Recall Peak ANGLE Reading

   To recall last peak ANGLE measurement, press and hold **BACKLIGHT** button for approximately 3 seconds. Peak TORQUE and ANGLE will be displayed alternately for 5 seconds.

Mode Cycle Count

ProTronic® Plus mode cycle count feature is used to indicate number of times tool has reached target torque in torque measurement mode or target angle in angle measurement mode.



Torque and Angle Mode Cycle Counting

1. Numerical counter located in top right of target torque or target angle screen will increase after each torque or angle cycle if applied torque or angle has reached target value.
2. When toggling between torque mode or angle mode using **ENTER** ↵ button or if target is changed, numerical counter will reset back to 00. Counter WILL NOT reset when re-zeroing, on menu entry/exit or power down.
3. Memory icon will turn on indicating at least one torque or angle cycle data has been stored in memory.

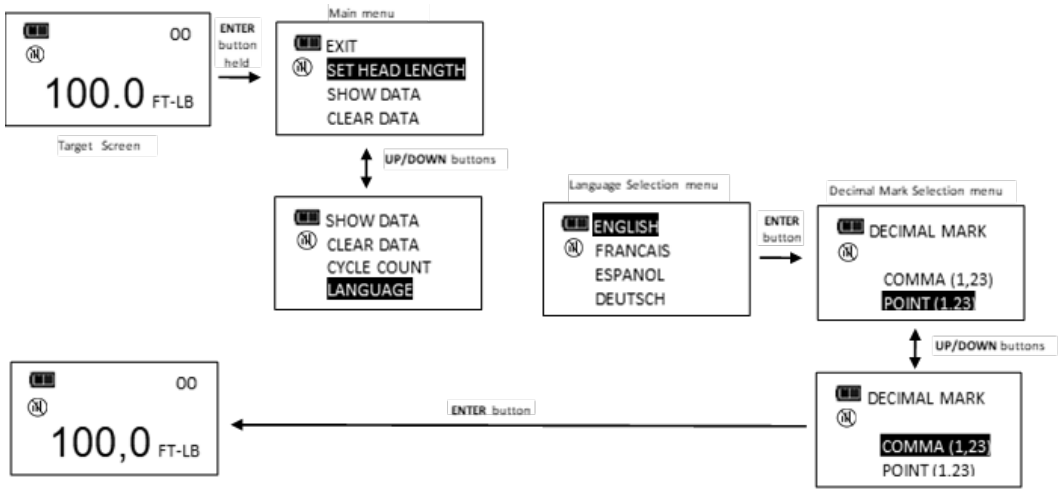
Main Menu

Main menu displays tool operational information.

1. From target torque or angle screen, press and hold **ENTER** ↵ button for 3 seconds.
2. Use **UP** ▲ **/DOWN** ▼ buttons to highlight menu selection then press **ENTER**↵ button.

   Menu Selections:

   - EXIT - Exits Main menu and returns to target screen.
   - SET HEAD LENGTH - Displays tool head length entry screen.
   - SHOW DATA - Displays stored torque and angle data.
   - CLEAR DATA - Clears stored torque and angle data.
   - CYCLE COUNT - Displays torque/angle cycle count screen.
   - LANGUAGE - Displays language selection menu.
   - SETTINGS - Displays advanced settings menu (see Settings Section).
   - CONFIGURE - Displays advanced configuration menu (see Configuration Section).
   - PAIR STATE - Displays wireless radio pairing state (see Settings Section).
3. To select language menu, press **ENTER** ↵ button while LANGUAGE is highlighted then highlight desired language and press **ENTER** ↵ button.
4. Decimal Mark selection menu is displayed. Decimal separator can be a comma or decimal point. Use **UP** ▲ **/DOWN** ▼ buttons to select decimal separator then press the **ENTER** ↵ button.



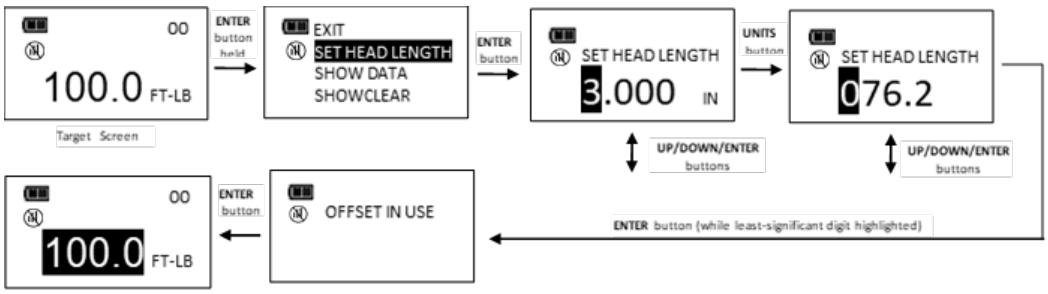
Setting Head Length (only applicable to Plus and 10 & 30 models)

NOTE: **If tool has an interchangeable head or an adapter or extension is added, length of head, adapter and/or extension being used can be entered to correct for a different length than head used to calibrate tool, without requiring re-calibration.**

1. To enter a head length, from target torque or angle screen, press and hold **ENTER** button for 3 seconds.
2. With SET HEAD LENGTH menu selection highlighted, momentarily press **ENTER** button.
3. Set Head Length screen is displayed next. Default head length is length of head at calibration (zero for fixed head tool) and is displayed with most-significant digit highlighted. Use **UP /DOWN** buttons to increase/decrease head length. Pressing and holding **UP /DOWN** buttons will progressively increase/decrease value faster.
4. Press **ENTER** button to accept digit and highlight next-significant digit.
5. Default units of length is in millimetres. Press **UNITS U** button to change.
6. Pressing **ENTER** button after least-significant digit is set returns to main menu. If length is changed from default, "OFFSET IN USE" message will be displayed on target screen.

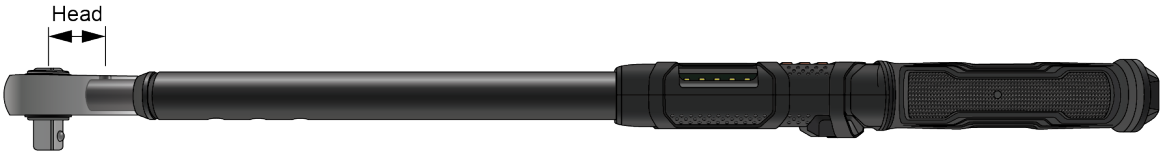
NOTE: **If UP /DOWN buttons are pressed simultaneously while on Set Head Length screen, displayed head length resets to zero or calibration head length for interchangeable head tools.**

Plus Versions:



NOTE: **Tools classed as having a 'Fixed Length Head' (ProTronic® Plus 10 N·m, 30 N·m and 800 N·m) are all calibrated with the 'Set Head Length' set to zero.**

NOTE: **Tools classed as having an 'Interchangeable Head' (ProTronic® Plus 100 N·m, 200 N·m and 340 N·m) are all calibrated with the 'Set Head Length' set to the distance between the release plunger and the centre of the drive.**

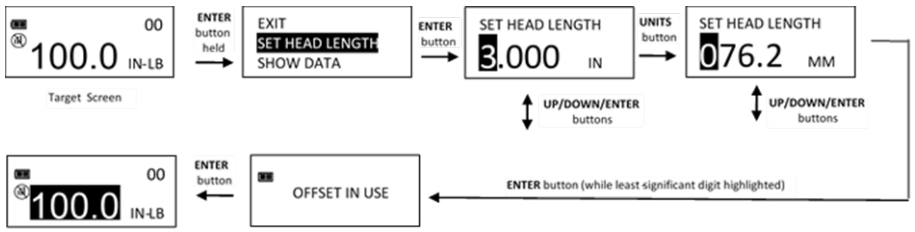


ProTronic® Plus Model	Size	Sq. Dr.	Head Type	Calibrated 'Set Head Length'
130512	100 N·m	⅜"	Interchangeable	31.8
130513	100 N·m	½"	Interchangeable	31.8
130514	200 N·m	½"	Interchangeable	31.8
130515	340 N·m	½"	Interchangeable	35.0
130516	800 N·m	¾"	Fixed	0

NOTE: **When a 'Fixed Head' has an offset added, change the 'Set Head Length' from zero to match the new distance between the centre of the drive to the centre of the fastener (either a positive or negative value)**

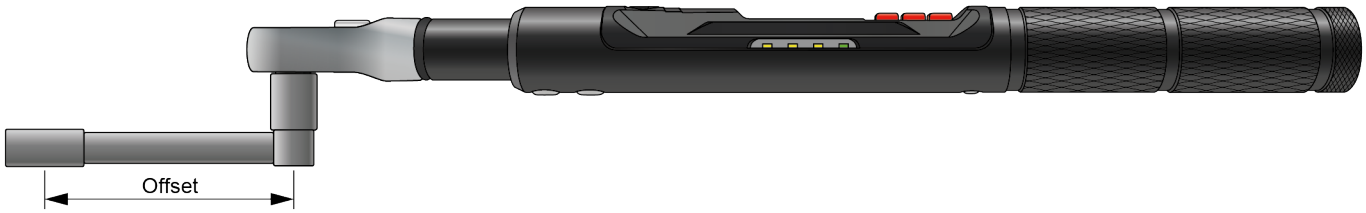
NOTE: **When an 'Interchangeable Head' has an offset added, change the 'Set Head Length' to the sum of the default/calibrated 'Set Head Length' plus the offset length:**

10 & 30 Versions:



NOTE: **These ProTronic® tools are classed as having a 'Fixed Length Head' and are calibrated with the 'Set Head Length' set to zero.**

NOTE: **When a 'Fixed Head' tool has an offset added, change the 'Set Head Length' from zero to match the new distance between the centre of the drive to the centre of the fastener (a positive value):**



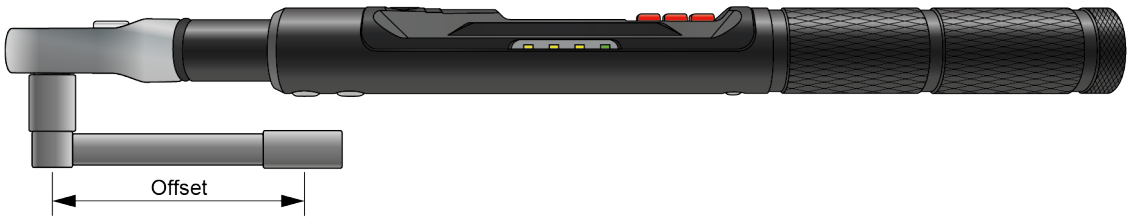
Use of Negative Offsets

Plus Versions:

NOTE: **When an 'Interchangeable Head' has a negative offset fitted, change the 'Set Head Length' to the default/calibrated 'Set Head Length' minus the offset length (this can generate a negative number for the new 'Set Head Length')**

10 & 30 Versions:

NOTE: When a negative offset is fitted, change the 'Set Head Length' from zero to match the new distance between the centre of the drive to the centre of the fastener (a negative value):



NOTE: OFFSET IN USE screen is displayed each time wrench is re-zeroed if 'Set Head Length' is not equal to the calibration head length.

Viewing Stored Torque and Angle Data

NOTE: Torque and angle data is not stored in memory if tool is connected to a wireless mobile device. Instead, data is transmitted to mobile device after each target cycle.

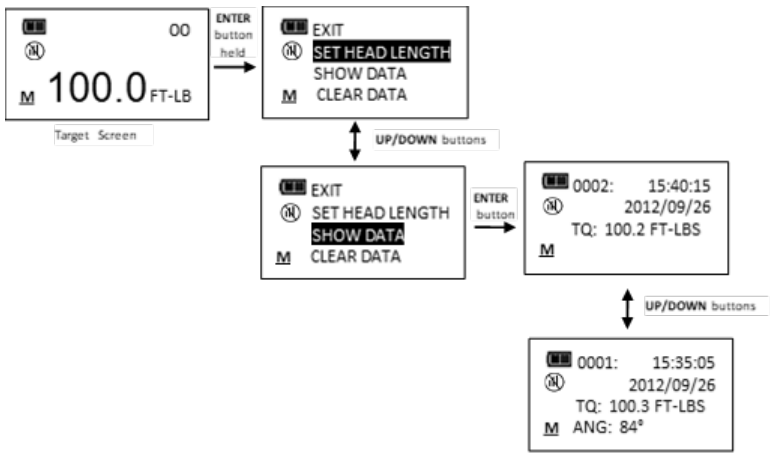
Torque data is stored in memory after each torque cycle if applied torque has reached target value and the tool is not connected to a mobile device. Torque and angle data is stored in memory if applied angle has reached target value. Memory Indicator is displayed when data is stored in non-volatile memory.

1. To view stored torque and angle data, from target torque or angle screen, press and hold **ENTER** button for 3 seconds.
2. Highlight SHOW DATA menu selection by pressing **UP /DOWN** buttons then press **ENTER** button to display Show Data screen.
3. In Show Data screen, scroll through each stored data record by pressing **UP /DOWN** buttons.

   Example: 0002 = Show Data List Counter: TQ = Peak torque value

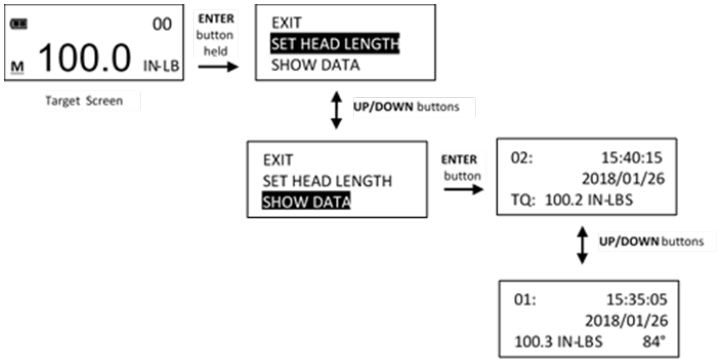
   0001 = Show Data List Counter: TQ = Peak torque value: ANG = Peak angle value
4. Pressing **ENTER** button while on Show Data screen returns to main menu.

Plus Versions:

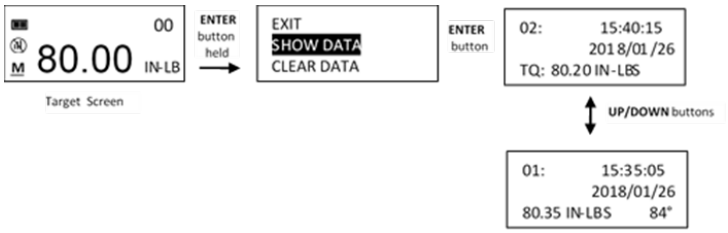


NOTE: A maximum of 1500 data records can be stored in memory. Memory full icon will be displayed when full. New data will replace oldest record until memory is cleared.

10 & 30 Versions:



Screwdriver Version:

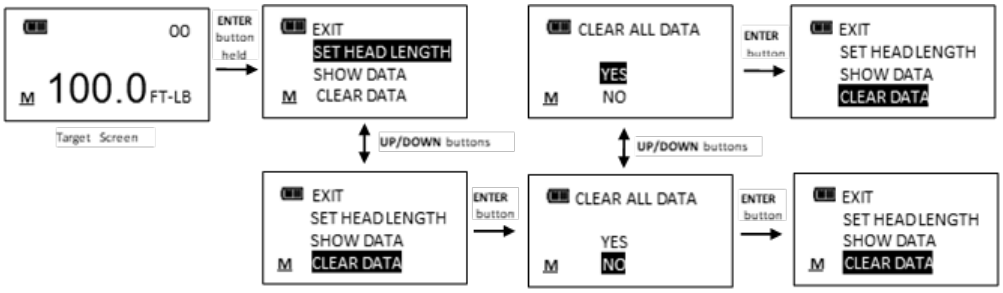


NOTE: A maximum of 50 data records can be stored in memory. Memory full icon will be displayed when full. New data is stored at number 50, moving older data down and bumping the oldest from location 01 until memory is cleared.

NOTE: Date and Time is blank if real-time-clock has not been set (see Setting Date and Time in the Configuration section).

Deleting Stored Torque and Angle Data

1. From target torque or angle screen, press and hold **ENTER** ↵ button for 3 seconds.
2. Highlight CLEAR DATA menu selection using **UP** ▲ **/DOWN** ▼ buttons then press **ENTER**↵ button to display CLEAR ALL DATA screen.
3. In CLEAR ALL DATA screen, highlight YES menu selection to delete all stored data, or NO menu selection to exit without deleting data.
4. Press **ENTER** ↵ button after making selection.

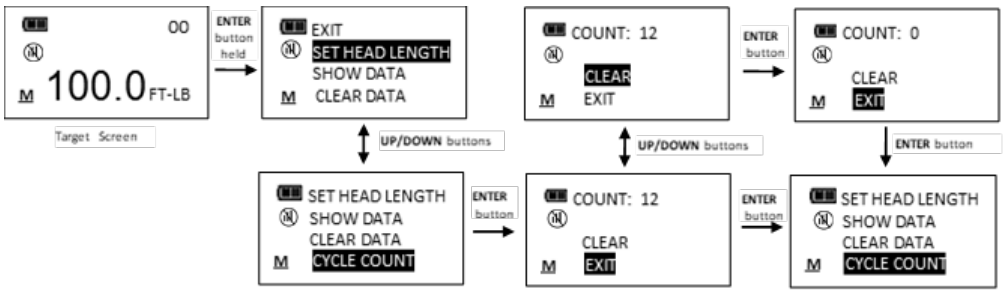


NOTE: If tool is Locked (see Pre-set Lock in Configuration section), Clear Data function is disabled.

Viewing and Clearing Tool Cycle Counter

Each time torque or angle target is reached, tool cycle counter is increased. Maximum cycle count is 999999.

1. From target torque or angle screen, press and hold **ENTER** ↵ button for 3 seconds.
2. Highlight CYCLE COUNT menu selection using **UP** ▲ **/DOWN** ▼ buttons.
3. Press **ENTER** ↵ button to display CYCLE COUNT screen.
4. To exit CYCLE COUNT screen without clearing count, press **ENTER** ↵ button while EXIT menu selection is highlighted.
5. To reset tool cycle count to 0, highlight CLEAR menu selection then press **ENTER** ↵ button.
6. EXIT menu selection is automatically highlighted after count is cleared. Press **ENTER** ↵ button to return to main menu.



NOTE: If tool is Locked (see Pre-set Lock in Configuration section) Clear count function is disabled.

Language

1. To select language menu, press **ENTER** ↵ button while LANGUAGE is highlighted then highlight desired language and press **ENTER** ↵ button.
2. Decimal Mark selection menu is displayed. Decimal separator can be a comma or decimal point. Use **UP** ▲ **/DOWN** ▼ buttons to select decimal separator then press the **ENTER** ↵ button.

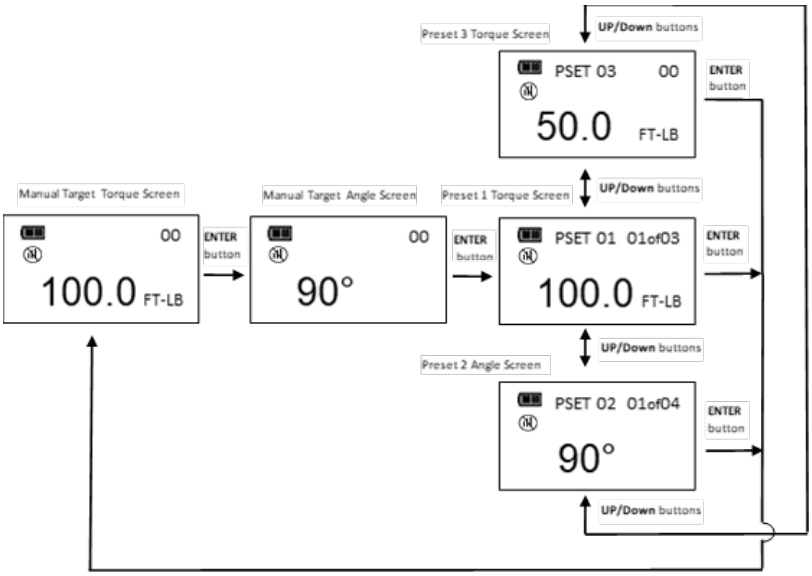
NOTE: Decimal separator will affect formatting of downloaded data when opened by Excel depending on Windows® regional settings.

3. To exit Main menu and return to target torque or angle screen, press **ENTER** ↵ button while EXIT menu selection is highlighted.

Target Pre-sets (PSET)

PSET function gives user ability to configure 50 pre-set target torque or target angle settings, each with a target, minimum, maximum (over range) and batch count value. PSETs are stored in non-volatile memory so that they are retained while power is off.

NOTE: After adding a Pre-set (see below), navigate between manual target torque, angle mode and PSET screen by repeatedly pressing ENTER ↵ button. While PSET screen is displayed, press UP ▲ /DOWN ▼ buttons to select additional configured PSETs.



NOTE: Bluetooth must be enabled (Configure Menu) before the pre-set menu can be accessed.

Adding a Torque Pre-set

1. From manual target torque screen, select Units of Measure. Ensure Bluetooth is enabled (Configure Menu).

2. Press and hold **UNITS** U button for 3 seconds.

3. ADD PRE-SET confirmation screen is displayed. Highlight YES menu selection using **UP** ▲ **/DOWN** ▼ buttons then press **ENTER** ↵ button**.** NO menu selection returns to main menu without adding a PSET.

4. TARGET TORQUE screen is displayed. TARGET TORQUE is target value of fastener. Initial TARGET TORQUE value is value from target torque screen. TARGET TORQUE can be set to any value within tool torque range by pressing **UP** ▲**/DOWN** ▼ buttons. Once desired target torque value has been set, press **ENTER** ↵ button**.**

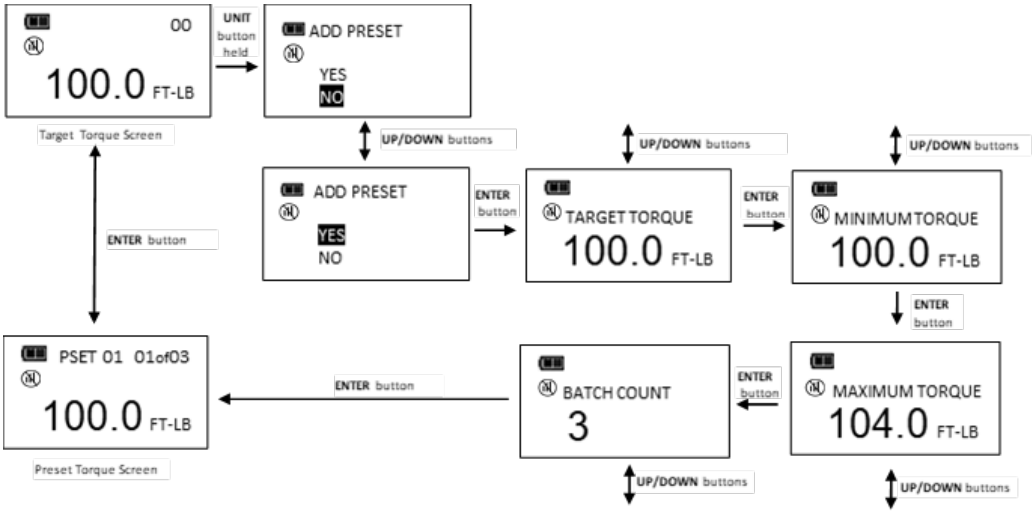
5. MINIMUM TORQUE screen is displayed. MINIMUM TORQUE is value at which green progress lights, audible alert and vibrator turn on. Initial MINIMUM TORQUE value is TARGET TORQUE value minus negative torque tolerance (default 0%, see MODE SETUP in Configuration section). MINIMUM TORQUE can be set to any value from TARGET TORQUE to tool minimum torque range by pressing **UP** ▲ **/DOWN** ▼ buttons. Once desired minimum torque value has been set, press **ENTER** ↵ button**.**

6. MAXIMUM TORQUE screen is displayed next. MAXIMUM TORQUE is torque value above which red progress lights turn on. Initial MAXIMUM TORQUE value will be TARGET TORQUE value plus positive torque tolerance (default 4%, see MODE SETUP in Configuration section). Maximum torque value can be set greater than TARGET TORQUE value to 10% above tool maximum range by pressing **UP** ▲ **/DOWN** ▼ buttons. Once desired maximum torque value has been set, press **ENTER** ↵ button**.**

7. BATCH COUNT screen is displayed next. Default value is zero. Batch count range is 0 to 99. Press **UP** ▲ **/DOWN** ▼ buttons to increase/decrease batch count. Mode Count increases each time target torque is reached if a batch count of zero is entered. Mode Count is displayed as 01ofXX if a non-zero batch count is entered where XX is batch count. Mode Count increases after each target torque cycle and resets to 01 after last batch count cycle. Once desired batch count value has been set, press **ENTER** ↵ button**.**

8. PSET target screen is displayed labelled with next available PSET number from 01 to 50.

9. To enter additional torque pre-sets, repeatedly press **ENTER** ↵ button until target torque screen is displayed and repeat steps above.



Adding an Angle Pre-set

1. From manual target angle screen, press and hold **UNITS** U button for 3 seconds. Ensure Bluetooth is enabled (Configure Menu).

2. ADD PRE-SET confirmation screen is displayed. Highlight YES menu selection using **UP** ▲ **/DOWN** ▼ buttons then press **ENTER** ↵ button. NO menu selection returns to main menu without adding a PSET.

3. TARGET ANGLE screen is displayed. TARGET ANGLE is fastener rotational angle target value. Initial TARGET ANGLE value is value from target angle screen. TARGET ANGLE can be set from 0 to 360° by pressing **UP** ▲ **/DOWN** ▼ buttons. Once desired target angle value has been set, press **ENTER** ↵ button.

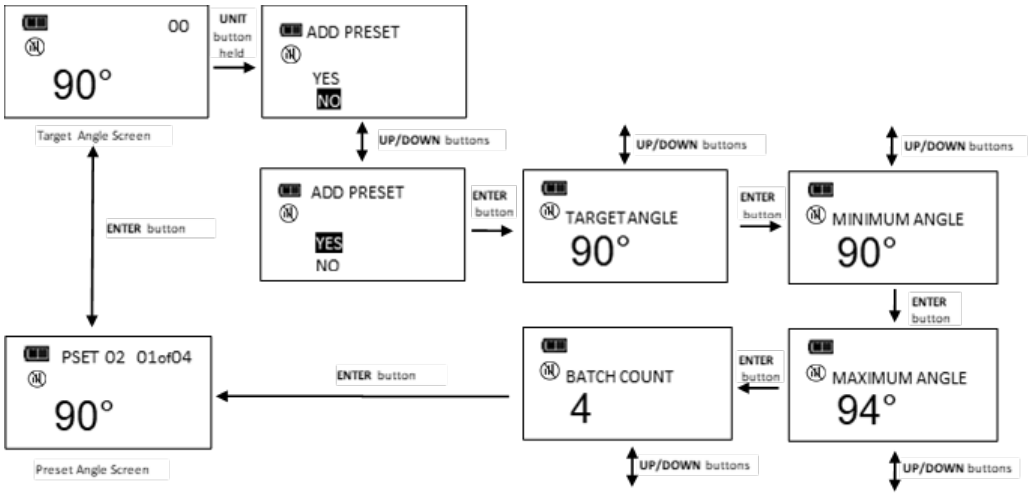
4. MINIMUM ANGLE screen is displayed. MINIMUM ANGLE is value at which green progress lights, audible alert and vibrator turn on. Initial MINIMUM ANGLE value is TARGET ANGLE minus negative angle tolerance (default 0%, see MODE SETUP in Configuration section). MINIMUM ANGLE can be set from 0 to TARGET ANGLE by pressing **UP** ▲**/DOWN** ▼buttons. Once desired minimum angle value has been set, press **ENTER** ↵button.

5. MAXMUM ANGLE screen is displayed next. MAXIMUM ANGLE is angle value above which red progress lights turn on. Initial MAXIMUM ANGLE value will be TARGET ANGLE plus positive angle tolerance (default 4%, see MODE SETUP in Configuration section). MAXIMUM ANGLE value can be set to any value greater than TARGET ANGLE by pressing **UP** ▲**/DOWN** ▼buttons. Once desired value has been set, press **ENTER** ↵button.

6. BATCH COUNT screen is displayed next. Default value is zero. Batch count range is 0 to 99. Press **UP**▲ **/DOWN** ▼ buttons to increase/decrease batch count. Mode Count increases each time target angle is reached if a batch count of zero is entered. Mode Count increases each time target angle is reached if a batch count of zero is entered. Mode Count is displayed as 01ofXX if a non-zero batch count is entered where XX is batch count. Mode Count increases after each target angle cycle and resets to 01 after last batch count cycle. Once desired batch count value has been set, press **ENTER** ↵ button.

7. PSET target screen is displayed labelled with next available PSET number from 01 to 50.

8. To enter additional angle pre-sets, repeatedly press **ENTER**↵ button until target angle screen is displayed and repeat steps above.

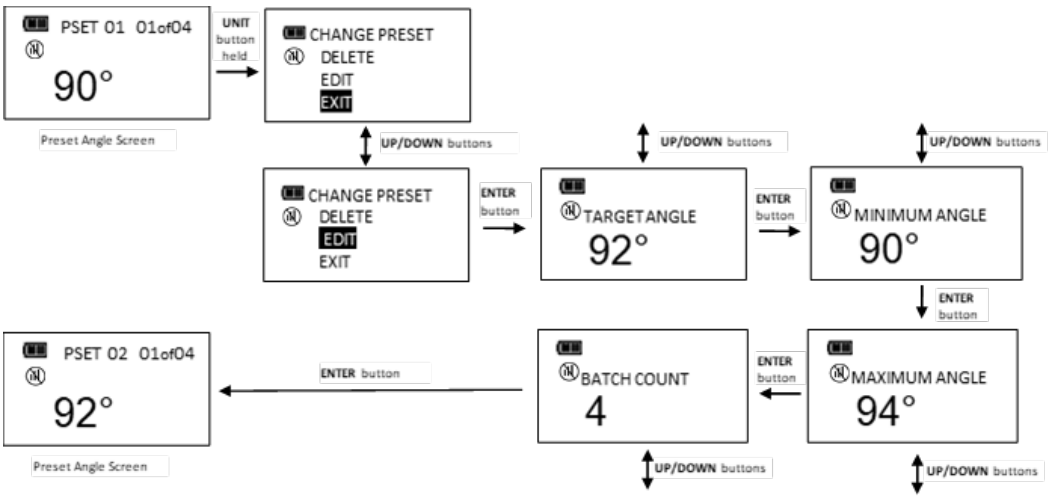


Editing a Pre-set

Edit PSET function gives user ability to edit stored PSETS on tool.

From Pre-set screen to be edited, press and hold **UNITS U** button for 3 seconds. Ensure Bluetooth is enabled (Configure Menu).

1. CHANGE PRE-SET screen is displayed.
2. Highlight **EDIT** selection using **UP ▲ /DOWN ▼** buttons then press **ENTER↵** button.
3. **TARGET** TORQUE or TARGET ANGLE screen is displayed. Value can be changed by pressing **UP ▲ /DOWN ▼** buttons. Once desired target torque or angle value has been set, press **ENTER↵** button**.**
4. MINIMUM TORQUE or MINIMUM ANGLE screen is displayed. Value can be changed by pressing **UP ▲ /DOWN ▼** buttons. Once desired torque or angle value has been set, press **ENTER↵** button**.**
5. MAXMUM TORQUE or MAXMUM ANGLE screen is displayed next. Value can be changed by pressing **UP ▲ /DOWN ▼** buttons. Once desired torque or angle value has been set, press **ENTER↵** button**.**
6. BATCH COUNT screen is displayed next. Value can be changed by pressing **UP ▲ /DOWN ▼** buttons. Once desired batch count value has been set, press **ENTER↵** button**.**
7. PSET target screen is displayed labelled with same PSET number.



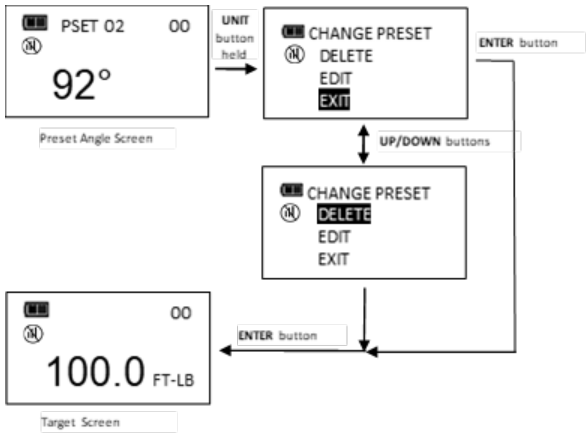
NOTE: Pressing ENTER ↵ button while EXIT menu selection is highlighted will exit without editing PSET.

Deleting a Pre-set

Delete PSET function allows user to remove stored pre-sets from tool.

From Pre-set screen to be deleted, press and hold **UNITS U** button for 3 seconds. Ensure Bluetooth is enabled (Configure Menu).

1. CHANGE PRE-SET screen is displayed.
2. Highlight DELETE menu selection using **UP /DOWN** buttons and press **ENTER** button.
3. Target screen is displayed and deleted PSET is no longer available for selection.



NOTE: Pressing ENTER button while EXIT menu selection is highlighted will exit without editing PSET.

NOTE: When a PSET is deleted, all other stored PSET's will retain their original PSET numbers. When a new PSET is entered, it will be assigned first available PSET number in sequence.

Pair State

Pair state of the tool to a mobile device is displayed on main menu. This function allows the user to unpair the tool from the mobile device if paired.

1. From target torque or angle screen, press and hold **ENTER** button for 3 seconds.
2. Highlight PAIR STATE menu selection using **UP /DOWN** buttons.
3. Press **ENTER** button to display Pair State.
4. To exit Settings menu and return to target torque or angle screen, press **ENTER** button while EXIT menu selection is highlighted.

NOTE: Pair State function does not operate when pairing with Norbar TorqApp.

NOTE: If state of the pairing is UNPAIRED, UP /DOWN buttons have no effect.

NOTE: If tool has been paired using RANDOM PIN, tool should be unpaired and set back to NO PIN if paring is no longer used.

SETTINGS MENU

Accessing Settings Menu

Settings are accessed from SETTINGS menu selection on main menu.

1. From target torque or angle screen, press and hold **ENTER** button for 3 seconds.
2. Highlight SETTINGS menu selection using **UP /DOWN** buttons.
3. Press **ENTER** button to display Settings menu.

   Menu Selections:

   - EXIT - Exits Settings menu and returns to target screen.
   - SHOW INFO - Displays tool operational information.
   - SLEEP TIME - Displays power down interval setup screen.
   - LCD CONTRAST - Displays LCD contrast setup screen.
   - KEY BEEP - Displays button press beep enable/disable setup screen.
   - TARGET BEEP – Displays target beep enable/disable setup screen.
   - AUTO BACKLIGHT - Displays auto backlight enable/disable screen to turn on backlight during measurement.
   - TOGGLE BACKLIGHT - Displays B**ACKLIGHT** button toggle or timeout enable/disable screen.
   - VIBRATOR CONFIG - Displays vibrator ON/OFF configuration for when target reached.
   - BATTERY TYPE – Displays the battery type selection screen.
   - PAIRING MODE – Displays wireless radio pairing mode selection screen.
4. To exit Settings menu and return to target torque or angle screen, press **ENTER** button while EXIT menu selection is highlighted.

NOTE: All user configurable settings are stored in non-volatile memory and are retained while power is off.

Show Info

Show Info menu selection displays tool operational information.

1. From Settings menu, press **ENTER** button while SHOW INFO selection is highlighted.
2. SHOW INFO screen is displayed.
3. **UP /DOWN** buttons are used to scroll screen.

   Operational Information:

   - SN: Serial number assigned to tool
   - CAL: Date of last tool calibration
   - ISD: In-Service Date
   - TCF: Torque Calibration Factor
   - ACF: Angle Calibration Factor
   - VER: Software version
   - RADIO: Radio Name
   - #: Asset Tag

- OVR CNT: Overtorque Counter tracks how many times an over-torque event occurred on tool (torque >125% of full-scale).
- TQZ: Torque Zero Offset
- AZZ: Z-Axis Angle Zero Offset
- AZX: X-Axis Angle Zero Offset
- AZO+: Gyro Zero Offset at CW full-scale torque.
- AZO-: Gyro Zero Offset at CCW full-scale torque
- TFS+: CW Full-scale torque ADC value
- TFS-: CCW Full-scale torque ADC value
- Copyright

4. Pressing **ENTER** ↵ button exits Show Info screen and returns to Settings menu.

Setting Sleep Time

This function will allow user to set interval tool enters power-down state following last applied torque or button press.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight SLEEP TIME selection then press **ENTER** ↵ button.
2. SLEEP TIME screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to select sleep interval.

   Selectable Intervals:

   - 2 MIN (factory default)
   - 5 MIN
   - 10 MIN
   - 30 MIN
   - 1 HR
   - 2 HR
   - 8 HR

4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.

Setting LCD Contrast

This function will allow user to set LCD contrast for optimal viewing.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight LCD CONTRAST selection then press **ENTER** ↵ button.
2. CONTRAST screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons while viewing display to change contrast to desired level.

Selectable levels: 20 to 80 in increments of 5 (factory default = 40).

4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.

Key Beep Setup

This function will allow user to enable or disable audio feedback when a button is pressed.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight KEY BEEP selection then press **ENTER** ↵ button.
2. KEY BEEP screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to highlight ENABLE (factory default) or DISABLE selection.
4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.

Target Beep Setup

This function will allow user to enable or disable audio feedback when target is reached.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight TARGET BEEP selection then press **ENTER** ↵ button.
2. TARGET BEEP screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to highlight ENABLE (factory default) or DISABLE selection.
4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.

Auto Backlight Setup

This function will allow user to enable or disable backlight from turning on during torque or angle measurement.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight AUTO BACKLIGHT selection then press **ENTER** ↵ button.
2. AUTO BACKLIGHT screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to highlight ENABLE (factory default) or DISABLE selection.
4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.

Toggle Backlight Setup

This function will allow user to enable or disable backlight toggle function. If toggle mode is disabled, **BACKLIGHT** button turns on backlight and it automatically turns off after five seconds following any last button press. If toggle mode is enabled, a **BACKLIGHT** button press will turn on backlight and it will remain on until next **BACKLIGHT** button press.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight TOGGLE BACKLIGHT selection then press **ENTER** ↵ button.
2. TOGGLE BACKLIGHT screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to highlight ENABLE or DISABLE (factory default) selection.
4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.

NOTE: Backlight will turn off when tool powers down either by POWER button press or sleep time.

NOTE: If toggle backlight is enabled and backlight is on, backlight will remain on during and after applying torque.

Vibrator Configuration

This function will allow user to configure vibrator for On or Off when target is reached for preference and/or battery power savings.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight VIBRATOR CONFIG selection then press **ENTER** ↵ button.
2. VIBRATOR CONFIG screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to toggle ON or OFF selection.
4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.

Battery Type Selection

This function will allow user to configure the battery discharge thresholds for the type of battery used.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight BATTERY TYPE selection then press **ENTER** ↵ button.
2. BATTERY TYPE screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to select the type of battery being used.
4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.

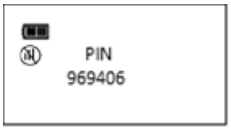
NOTE: Tool is configured for Lithium battery shipped from factory. If Lithium battery is replaced with Alkaline or rechargeable Nickel-Metal Hydride (NIMH), battery type should be changed so battery level icon and LOW battery warnings function optimally. Battery life (REPLACE) will not be impacted, however 50% and Low will be optimized to show most accurate linear discharge time.

NOTE: Screwdriver is configured for Lithium battery shipped from factory. If Lithium battery is replaced with Alkaline or rechargeable Nickel-Metal Hydride (NIMH), battery type should be changed so battery level icon and LOW battery warnings function optimally. Battery life (REPLACE) will not be impacted, however 50% and Low will be optimized to show most accurate linear discharge time.

Pairing Mode Selection

Tool can be paired with a mobile device for increased security. Tool supports two pairing modes: 1) NO PIN and 2) RANDOM PIN. In either mode, pairing tool to a mobile device must be initiated from the mobile device. If NO PIN mode is selected, neither tool nor mobile device will ask for a PIN during pairing process. This method is simpler but less secure than RANDOM PIN method. If RANDOM PIN mode is selected, mobile device will ask for a PIN when pairing is initiated, and tool will display a randomly-generated PIN. User enters PIN into the mobile device dialog to complete the pairing process.

1. From Settings menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight PAIRING MODE selection then press **ENTER** ↵ button.
2. PAIRING MODE screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to select the type of pairing mode used.
4. Press **ENTER** ↵ button to accept selection and exit to Settings menu.



NOTE: PIN is displayed on the tool during pairing with mobile device. Enter PIN into device when requested. Display returns to normal after connection:

NOTE: Pairing Mode function does not operate when pairing with Norbar TorqApp.

CONFIGURATION MENU

Accessing Configuration Menu

Configuration is accessed from CONFIGURE menu selection on main menu.

NOTE: If tool has been locked (see Pre-set Lock and Job Mode), a password entry is required to enter Configure menu - default factory setting 91748.

1. From target torque or angle screen, press and hold **ENTER** button for 3 seconds.
2. Highlight CONFIGURE menu selection using **UP /DOWN** buttons.
3. Press **ENTER** button to display Configure menu.
   Menu Selections:
   - EXIT - Exits Configure menu and returns to target torque or angle screen.
   - MODE SETUP - Displays tool mode setup menu.
   - PRE-SET LOCK - Displays Pre-set lock menu.
   - DELETE PRE-SETS - Displays delete all pre-sets menu.
   - JOB MODE - Displays Job mode menu.
   - MENU LOCK – Password protects all menus (default factory setting 91748).
   - CALIBRATION - Displays tool calibration menu (password protected – default factory setting 91748).
   - SET DATE/TIME - Displays clock date and time entry screens.
   - CHANGE PASSWD - Displays change password menu (default factory setting 91748).
   - ASSET TAG - Displays user configurable 15-character string.
   - BLE ENABLE
4. To exit Configure menu and return to target torque or angle screen, press **ENTER** button while EXIT menu selection is highlighted.

NOTE: All user configurable settings are stored in non-volatile memory and are retained while power is off.

Mode Setup

Mode setup menu allows user configure target torque and angle minus and plus tolerances and enable/disable Torque THEN Angle mode and Torque AND angle mode.

1. From Configure menu, press **ENTER** button while MODE SETUP selection is highlighted.
2. Mode Setup menu is displayed.
   Menu Selections:
   - EXIT - Exits Mode setup menu and returns to Configure menu screen.
   - TQ-% SETUP - Displays target torque minus tolerance entry screen.
   - TQ+% SETUP - Displays target torque plus tolerance entry screen.
   - ANG-% SETUP - Displays target torque minus tolerance entry screen.
   - ANG+% SETUP - Displays target torque plus tolerance entry screen.
   - THEN DISABLED - Displays THEN Mode enable/disable screen.
   - AND DISABLED - Displays AND Mode enable/disable screen.
3. Use **UP /DOWN** buttons to highlight menu selections.
4. Press **ENTER** button while EXIT menu selection is highlighted to return to Configure menu.

Setting Target Tolerances

This function will allow user to set plus and minus tolerances for torque and angle targets.

NOTE: These tolerances are used for manual modes only. Pre-set tolerances are defined by Minimum and Maximum values.

1. From Mode Setup menu, use **UP ▲ /DOWN▼** buttons to highlight tolerance selection to setup (TQ-%, TQ+%, ANG-% ANG+%) then press **ENTER ↵** button.
2. Tolerance screen is displayed.
3. Use **UP ▲ /DOWN ▼** buttons to change tolerance value. Range is 0 to 10% (factory default for minus tolerance is 0% and 4% for plus tolerance).
4. Press **ENTER ↵** button to accept selection and exit to Mode Setup menu.

NOTE: Green progress lights turn on at target minus -% TOL.

NOTE: Red progress lights turn on above target plus +% TOL.

NOTE: Plus tolerance is added to minimum Pre-set value to define initial maximum value when a Pre-set is first added.

Enable/Disable Torque THEN Angle Mode

This function will allow user to enable or disable Torque THEN Mode.

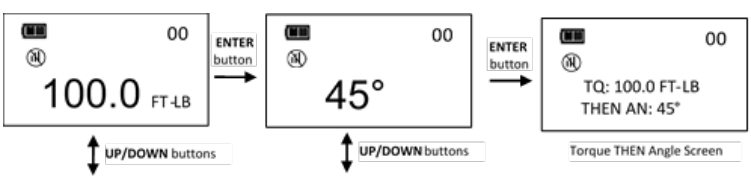
1. From Mode Setup menu, use **UP ▲ /DOWN ▼** buttons to highlight THEN DISABLED (factory default) selection then press **ENTER ↵** button.
2. TQ THEN ANGLE enable/disable screen is displayed.
3. Use **UP ▲ /DOWN ▼** buttons to select ENABLE or DISABLE selection.
4. Press **ENTER↵** button to accept selection and exit to Mode Setup menu.

NOTE: Menu selection indicates current configuration (ENABLED or DISABLED).

Torque THEN Angle Mode

Torque THEN Angle mode is setup by first setting a target torque and units then a target angle before selecting Torque THEN Angle mode. In Torque THEN Angle mode, when applied torque reaches target torque, tool automatically switches to angle mode for angle measurement. Progress lights indicate applied torque progress while torque is measured and angle when angle is measured. If torque is below target torque when angle reaches target angle, green progress lights will not turn on and if angle exceeds maximum angle, red progress lights turn on indicating a potential problem with fastener.

1. From target torque screen, use **UP ▲ /DOWN▼** buttons to set target torque and **UNITS U** button to select torque measurement units then press **ENTER ↵** button.
2. Angle target screen is displayed. Use **UP ▲ /DOWN ▼** buttons to set target angle then press **ENTER↵** button.
3. Torque THEN Angle mode screen is displayed.
4. Apply torque until target is reached then rotate tool to target angle.



NOTE: UNITS U button can be used to select torque units while on Torque THEN Angle screen.

NOTE: Torque cycle is not recorded in memory unless both torque and angle reach targets.

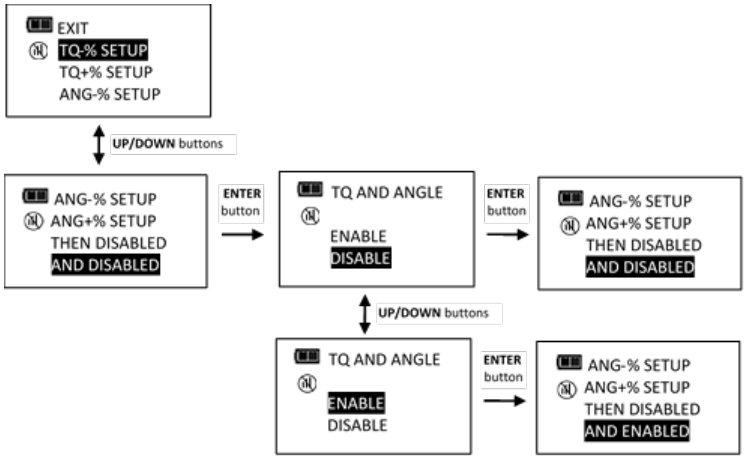
NOTE: Red progress lights turn on if torque exceeds 110% of tool full-scale or if angle exceeds target + plus tolerance while in manual mode.

NOTE: Torque THEN Angle Pre-sets are entered by pressing and holding UNITS U button while on Torque THEN Angle screen. MAXIMUM TORQUE defaults to full range plus 10%. Refer to "Adding a Torque Pre-set" and "Adding an Angle Pre-set" in Basic section for parameter entry.

Enable/Disable Torque AND Angle Mode

This function will allow user to enable or disable Torque AND Mode.

1. From Mode Setup menu, use **UP /DOWN** buttons to highlight AND DISABLED (factory default) selection then press **ENTER** button.
2. TQ AND ANGLE enable/disable screen is displayed.
3. Use **UP /DOWN** buttons to select ENABLE or DISABLE selection.
4. Press **ENTER** button to accept selection and exit to Mode Setup menu.

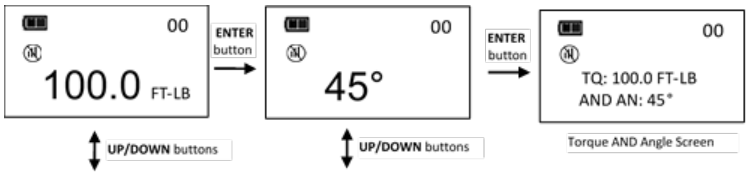


NOTE: Menu selection indicates current configuration (ENABLED or DISABLED).

Torque AND Angle Mode

Torque AND Angle mode is setup by first setting a target torque and units then a target angle before selecting Torque AND Angle mode. In Torque AND Angle mode, torque and angle are measured simultaneously. Yellow progress lights track torque measurement. When both torque and angle reach their targets, green progress lights turn on and torque and angle data record is stored. If either of measurements exceed their upper tolerance, red progress lights turn on.

1. From target torque screen, use **UP /DOWN** buttons to set target torque and **UNITS U** button to select torque measurement units then press **ENTER** button.
2. Angle target screen is displayed. Use **UP /DOWN** buttons to set target angle then press **ENTER** button until Torque AND Angle mode screen is displayed.
3. Apply torque and rotate tool until both targets are reached.



NOTE: UNITS U button can be used to select torque units while on Torque AND Angle screen.

NOTE: Torque THEN Angle Pre-sets are entered by pressing and holding UNITS U button while on Torque THEN Angle screen. Refer to "Adding a Torque Pre-set" and "Adding an Angle Pre-set" in Basic section for parameter entry.

NOTE: Torque cycle is not recorded in memory unless both torque and angle reach targets.

NOTE: Red progress lights turn on if torque exceeds target + plus tolerance or if angle exceeds target + plus tolerance while in manual mode.

NOTE: Red progress lights turn on if torque exceeds maximum torque or if angle exceeds maximum angle in Pre-set mode.

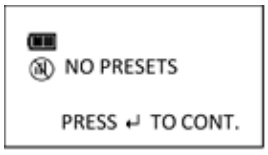
Pre-set Lock

Pre-set Lock function allows user to lock tool so that only configured pre-sets are accessible. No other pre-sets can be configured and manual target torque and angle modes are not accessible when locked.

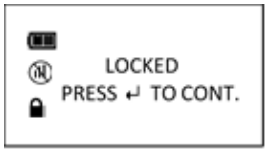
NOTE: Password entry is required to enable Pre-set Lock. When locked, password entry is required to re-enter Configure menu (default factory setting 91748).

1. From Configure menu, use **UP ▲ /DOWN ▼** buttons to highlight PRE-SET LOCK selection then press **ENTER ↵** button.
2. Pre-set Lock enable/disable screen is displayed.
3. Use **UP ▲ /DOWN ▼** buttons to select LOCK or UNLOCK selection.
4. Press **ENTER ↵** button to accept selection and exit to Configure menu.

NOTE: If LOCK is selected without a Pre-set configured, following screen is displayed:



NOTE: When Pre-set Lock is enabled, Clear Memory function is disabled and displays following Locked message if attempted:

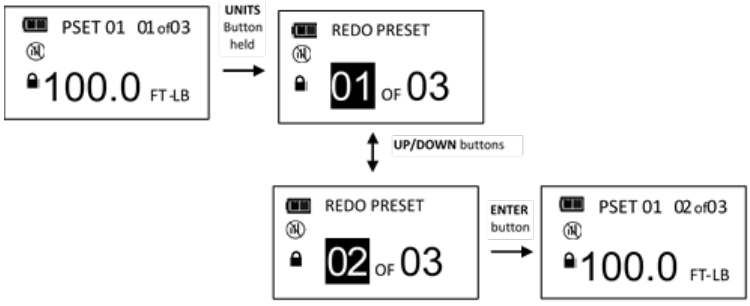


NOTE: When Pre-set Lock is enabled, Clear Cycle count function is disabled and displays Locked message if attempted.

Redo Batch Count

This function allows a specific sequence in a batch to be selected and redone.

1. Create a **PRE-SET** with a batch more than one. (See PRE-SET section in this manual).
2. From Configure Menu enable **PRE-SET LOCK**. (See PRE-SET LOCK in this manual).
3. From the **PRE-SET** screen press and hold **UNITS** **U** button for 3 seconds.
4. From the **REDO PRE-SET** screen, use **UP** ▲ **/DOWN** ▼ buttons to select batch sequence to be redone.
5. Press **ENTER** ↵ button to confirm selection.



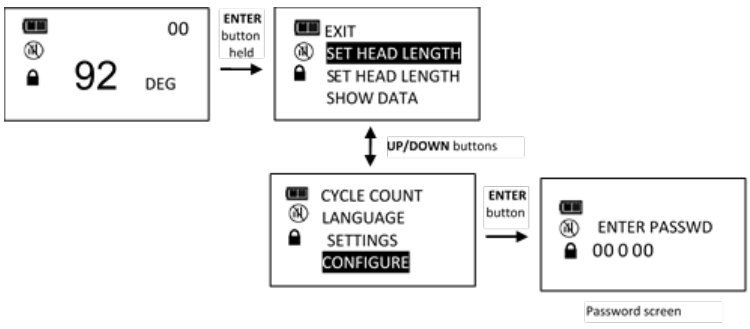
NOTE: REDO BATCH COUNT does not feature in Configuration Menu.

NOTE: REDO BATCH COUNT can only be enabled with PRE-SET LOCK enabled.

Pre-set Unlock

When Pre-set Lock is enabled, a password is required to access Configure menu (default factory setting 91748).

1. From target torque or angle screen, press and hold **ENTER** ↵ button for 3 seconds.
2. Highlight CONFIGURE menu selection using **UP** ▲ **/DOWN** ▼ buttons.
3. Press **ENTER** ↵ button to display Password screen.
4. Follow password entry procedure found in the ProTronic® Plus Calibration Manual.



Delete All Pre-sets

Delete Pre-sets function allows user to delete all pre-sets at once.

1. From Configure menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight DELETE PRE-SET selection then press **ENTER** ↵ button.
2. Delete Pre-sets confirmation screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to select YES or NO selection.
4. Press **ENTER** ↵ button to accept selection and exit to Configure menu.

NOTE: If Delete Pre-sets is selected without a Pre-set configured, following screen is displayed:

Job Mode

Job Mode function allows user to enable or disable tool pre-set Job mode. When in Job mode, tool executes pre-sets in order configured and automatically switches to next pre-set when batch count reaches zero. Tool is locked and Pre-set lock icon is displayed when Job mode is enabled.

NOTE: Password entry is required to enable Job Mode. When enabled, password entry is required to re-enter Configure menu (default factory setting 91748).

1. From Configure menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight JOB MODE selection then press **ENTER** ↵ button.
2. Job Mode enable/disable screen is displayed.
3. Use **UP** ▲ **/DOWN** ▼ buttons to select ENABLE or DISABLE.
4. Press **ENTER** ↵ button to accept selection and exit to Configure menu.

NOTE: Text "JOB" is displayed between PSET number and batch count when enabled.

Menu Lock

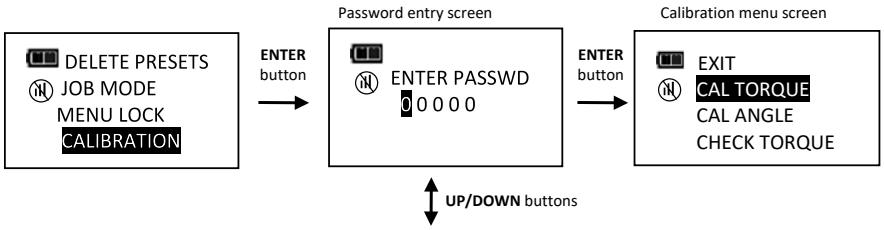
This function locks all menus with password.

NOTE: Password entry is required to enable Menu Lock. When locked, password entry is required to re-enter Main Menu (default factory setting 91748).

1. From Configure menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight MENU LOCK selection then press **ENTER** ↵ button.
2. MENU LOCK screen is displayed.
3. Press **ENTER** ↵ button to accept selection and exit to Configure menu.

Calibration Menu

Calibration menu is password protected (default factory setting 91748).



Calibration Menu Selections:

- EXIT - Exits Calibration menu and returns to Configure menu.
- CAL TORQUE – Torque Calibration function (please refer to the ProTronic® Plus Calibration Manual).
- CAL ANGLE – Angle Calibration function (please refer to the ProTronic® Plus Calibration Manual).
- CHECK TORQUE – Torque Certification function (please refer to the ProTronic® Plus Calibration Manual).
- CHECK ANGLE – Angle Certification function (please refer to the ProTronic® Plus Calibration Manual).
- SET CAL DATE – Displays Set Calibration Date screen.
- CAL CYCLE CNT – Displays Calibration Cycle Count.
- CYCLE COUNT - Displays torque/angle cycle count screen.
- ENABLE CAL CNT – Enable Calibration Needed Warning Cycle Count and Lock Cycle Count.
- SET CAL INTRVAL – Displays Set Calibration Needed interval screen.
- CAL COUNTDOWN – Displays Set Calibration Needed warning days before lockout screen.

Tool can be configured to display a Calibration Need message when a calibration interval has expired and/or when a number of torque cycles have been completed. Tool can be set to lock out any more torque cycles until tool is re-calibrated.

Setting Calibration Date

If a tool does not require re-calibration, Set Calibration Date function allows user to set Calibration Date used to calculate CAL NEEDED interval.

1. From Calibration menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight SET CAL DATE selection then press **ENTER** ↵ button.
2. SET DATE screen is displayed with year highlighted.
3. Use **UP** ▲ **/DOWN** ▼ buttons to set year then press **ENTER**↵ button to highlight month.
4. Use **UP** ▲ **/DOWN** ▼ buttons to set month then press **ENTER**↵ button to highlight day.
5. Use **UP** ▲ **/DOWN** ▼ buttons to set day then press **ENTER**↵ button.
6. Clock is set and Calibration menu is displayed.

NOTE: Year selection will scroll up from 2018. Month selection will scroll from 01 through 12 and roll over from 12 to 01 and down from 01 to 12. Day selection will scroll from 01 through 31 and roll over from 31 to 01 and down from 01 to 31.

Calibration Cycle Count

Each time torque or angle target is reached, tool calibration cycle counter is increased. Maximum cycle count is 999999.

7. From Calibration Menu, highlight CAL CYCLE COUNT menu selection using **UP ▲ /DOWN ▼** buttons.
8. Press **ENTER ↵** button to display CAL CYCLE COUNT screen.
9. To exit CAL CYCLE COUNT screen without clearing count, press **ENTER ↵** button while EXIT menu selection is highlighted.
10. To reset tool cal cycle count to 0, highlight CLEAR menu selection then press **ENTER ↵** button.
11. EXIT menu selection is automatically highlighted after count is cleared. Press **ENTER ↵** button to return to main menu.

NOTE: Cal Cycle Count is automatically reset to zero when tool is recalibrated.

NOTE: If tool does not require calibration and SET CAL DATE function is used to update calibration date, Cal Cycle Count should be manually cleared.

Enable Calibration Count

This function allows user to enable number of calibration cycles before CAL NEEDED message is displayed on tool. When enabled, a calibration warning count can be set to display number of cycles left before tool should be calibrated. A calibration lock count can be set to lock tool from any more use when lock count is reached.

1. From Calibration Menu, select **ENABLE CAL CNT,** press **ENTER ↵** button.
2. From **ENABLE CAL CNT** screen, press **UP ▲ /DOWN ▼** buttons to select **ENABLE**.
3. From **WARNING COUNT** screen, press **UP ▲ /DOWN ▼** buttons to set cycle count value, press **ENTER ↵** button.
4. From **LOCK COUNT** screen press **UP ▲ /DOWN ▼** buttons to set lock cycle count value, press **ENTER ↵** button.

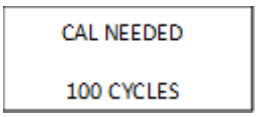
NOTE: Maximum value for warning and lock counts is 5000.

NOTE: If Enable Cal Count is disabled, warning count and lock count are set to zero and a CAL NEEDED message is not displayed by cal cycle count.

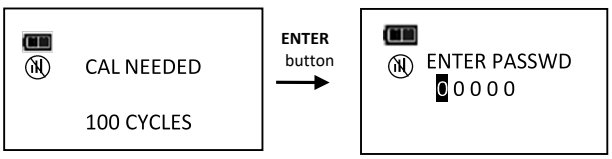
NOTE: If warning count is set to zero and lock count is non-zero, CAL NEEDED screen is displayed when cal cycle count reaches lock count and no warning count is displayed.

NOTE: If warning count is set to non-zero and lock count is zero, CAL NEEDED screen is displayed when cal cycle count reaches warning count and tool does not lock.

NOTE: If both warning count and lock count are non-zero, CAL NEEDED screen is displayed when cal cycle count reaches warning count and number of cycles until lock count is displayed:



NOTE: If cal cycle count reaches non-zero lock count, applying torque immediately turns on red LEDs and vibrator. If ENTER ↵ button pressed, password screen is displayed:



Setting Calibration Interval

This function allows user to set calibration interval for when "CAL NEEDED" message will be displayed.

1. From Configure menu, use **UP ▲ /DOWN ▼** buttons to highlight SET CAL INTRVAL selection then press **ENTER ↵** button.
2. CAL INTERVAL screen is displayed.
3. Use **UP ▲ /DOWN ▼** buttons to change calibration interval.

Selectable Intervals:

- 12 MON (factory default)
- 6 MON
- 3 MON
- DISABLED

4. Press **ENTER ↵** button to accept selection and exit to Configure menu.

NOTE: Clock Date and Time must be set before calibration interval will function. If batteries are removed from tool for longer than 20 minutes, clock will revert to default settings and must be re-entered at power on.

NOTE: Calibration interval is calculated from either IN-Service Date or last Calibration date (see SHOW INFO menu in Operation Manual) depending on which is more recent date. When clock Date is greater than IN-Service or Last Calibration date, plus Cal Interval, "CAL NEEDED" message will be displayed.

NOTE: If tool is not locked (see Set Calibration Needed Countdown section below), pressing ENTER ↵ button will continue to target menu or applying torque will immediately display torque or angle measurement and return to target menu when released.

NOTE: If an invalid date is entered and Calibration interval is enabled, an unintended "CAL NEEDED" message may be displayed. Either disable calibration interval or enter a correct date.

Setting Calibration Needed Countdown

This function will allow user to set number of days when "CAL NEEDED" message will be displayed along with days remaining before a tool lock out occurs due to calibration interval expiring.

1. From Calibration menu, use **UP ▲ /DOWN ▼** buttons to highlight CAL COUNTDOWN selection then press **ENTER ↵** button.
2. CAL COUNTDOWN screen is displayed.
3. Use **UP ▲ /DOWN ▼** buttons to change calibration countdown.

   Range: 0 to 10 days.

4. Press **ENTER ↵** button to accept selection and exit to Configure menu.

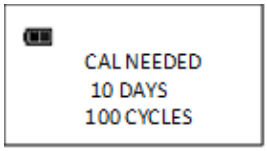
NOTE: Clock Date and Time must be set and Cal interval enabled before calibration countdown will function (see Setting Date and Time Setting Calibration Interval).

NOTE: **Calibration Countdown is number of days before tool is locked out from use following an expired Cal interval. Maximum count is 10 days. Countdown number of days before lockout is displayed below "CAL NEEDED" message:**

NOTE: **"CAL NEEDED" message will be displayed on power up and after a re-zero. Applying torque while countdown is remaining, torque or angle is immediately displayed. Red LEDs and buzzer turn on if countdown has expired. Pressing ENTER ↵ button after countdown has expired will display Password Entry screen.**

NOTE: **An entered Cal Countdown value of 0 days will disable calibration countdown and if Cal interval is enabled, tool does not lock when CAL NEEDED" message is displayed.**

NOTE: **Calibration Countdown and Calibration Cycles can be enabled simultaneously. Both number of days and number of cycles before tool is locked are displayed:**



Setting Date and Time

Set Date/Time function allows user to set real-time-clock date and time for time stamping data records, recording last calibration date and notifying user of an expired calibration interval.

NOTE: **When date and time is set for first time, In-Service date is also set and is used for calculating initial calibration interval (see "Setting Calibration Interval" in Configuration section).**

1. From Configure menu, use **UP ▲ /DOWN ▼** buttons to highlight SET DATE/TIME selection then press **ENTER ↵** button.
2. SET DATE screen is displayed with year highlighted.
3. Use **UP ▲ /DOWN ▼** buttons to set year then press **ENTER↵** button to highlight month.
4. Use **UP ▲ /DOWN ▼** buttons to set month then press **ENTER↵** button to highlight day.
5. Use **UP ▲ /DOWN ▼** buttons to set day then press **ENTER↵** button.
6. SET TIME screen is displayed with hour highlighted.
7. Use **UP ▲ /DOWN ▼** buttons to set hour then press **ENTER↵** button to highlight minutes.
8. Use **UP ▲ /DOWN ▼** buttons to set minutes then press **ENTER↵** button to highlight seconds.
9. Use **UP ▲ /DOWN ▼** buttons to set seconds then press **ENTER↵** button.
10. Clock is set and Configure menu is displayed.

NOTE: **Year selection will scroll up from 2018. Month selection will scroll from 1 to 12. Day selection will scroll from 1 to 31.**

NOTE: **Hour selection will scroll through 0 to 23. Minute and Second selections will scroll through 0 to 59.**

NOTE: **If batteries are removed from tool for longer than 20 minutes, clock will revert to default settings and must be re-entered at power on.**

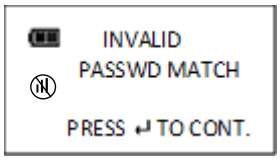
Change Password

Change Password function allows user to change password to a new password. Default password is required to initially change password (default factory setting 91748).

1. From Configure menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight CHANGE PASSWD selection then press **ENTER** ↵ button.
2. Initial password entry screen is displayed.
3. Enter default password (91748) if changing for first time, otherwise enter current user password using **UP** ▲ **/DOWN** ▼ buttons to change each digit followed by **ENTER**↵ button.
4. Change password entry screen is displayed.
5. Enter new password using **UP** ▲ **/DOWN** ▼ buttons to change each digit followed by **ENTER**↵ button.
6. Confirm password entry screen is displayed.
7. Re-enter new password using **UP** ▲ **/DOWN** ▼ buttons to change each digit followed by **ENTER**↵ button.

NOTE: Pressing POWER ⏻ button at any time aborts password change sequence.

NOTE: If an invalid password is entered during confirmation step, Invalid Password Match screen is displayed and new password is not accepted.



Asset Tag

This function displays a configurable 15-character string. Asset Tag string can be set or read by a mobile device.

1. From Configure menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight ASSET TAG selection then press **ENTER**↵ button.
2. ASSET TAG screen is displayed.
3. Press **UNITS** **U** button to highlight the next character.
4. Use **UP** ▲ **/DOWN** ▼ buttons to select character.
5. Press **ENTER** ↵ button to accept selection and exit to Configure menu.

NOTE: Available characters for Asset Tag: 0-9, A-Z, space # _ % ‘ ( ) + , - .

NOTE: Use mobile app to configure Asset Tag via wireless (Contact factory for software).

BLE Enable

This function enables or disables the wireless radio.

NOTE: Password entry is required to enable or disable the radio.

1. From Configure menu, use **UP** ▲ **/DOWN** ▼ buttons to highlight BLE ENABLE selection then press **ENTER** ↵ button.
2. Enter password.
3. MENU LOCK screen is displayed.
4. Press **ENTER** ↵ button to accept selection and exit to Configure menu.

NOTE: Enable is Factory default. Link icons are not displayed on target screen when radio is disabled.

DECLARATION OF CONFORMANCE

EU Declaration of Conformity (No 0036V0)

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration:
ProTronic® Plus. (Models: 130512, 130513, 130514, 130515, 130516, 130522 & 130523)
Serial Number – All.

The object of the declaration described above is in conformity with the relevant union harmonisation legislation:
Directive 2014/30/EU on Electromagnetic Compatibility.
Directive 2014/53/EU on Radio Equipment.
Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

The object of the declaration described above has been designed to comply with the following standards:
EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use. EMC requirements.
ETSI EN 301 489-1 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility

The basis on which conformity is being declared:
The technical documentation required to demonstrate that the products meet the requirements of the above Directives has been compiled by the signatory below and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2021.

The authorised representative within the European Union (EU) is:
Francesco Frezza Snap-on Equipment S.r.l. Via Prov. Carpi, 33 42015 Correggio RE Italy

Signed for and on behalf of Norbar Torque s Ltd.

Signed: T. M. Lester **Full Name:** Trevor Mark Lester B.Eng.
Date: 20 April 2021 **Authority:** Compliance Engineer
Place: Norbar Torque s Ltd., Wildmere Road, Banbury, Oxfordshire. OX16 3JU

UK Declaration of Conformity (No 0036V0)

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration:
ProTronic® Plus. (Models: 130512, 130513, 130514, 130515, 130516, 130522 & 130523).
Serial Number – All.

The object of the declaration described above is in conformity with the relevant UK statutory requirements:
Electromagnetic Compatibility Regulations 2016
Radio Equipment Regulations 2017
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

The object of the declaration described above has been designed to comply with the following standards:
BS EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use. EMC requirements.
ETSI EN 301 489-1 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility

The basis on which conformity is being declared:
The technical documentation required to demonstrate that the products meet the requirements of the above legislation has been compiled by the signatory below and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2021.

Signed for and on behalf of Norbar Torque s Ltd.

Signed: T. M. Lester **Full Name:** Trevor Mark Lester B.Eng.
Date: 20 April 2021 **Authority:** Compliance Engineer
Place: Norbar Torque s Ltd., Wildmere Road, Banbury, Oxfordshire. OX16 3JU

DECLARATION OF CONFORMANCE

EU Declaration of Conformity (No 0037V0)

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration:
ProTronic® Plus Screwdriver. (Model: 130524).
Serial Number – All.

The object of the declaration described above is in conformity with the relevant union harmonisation legislation:
Directive 2014/30/EU on Electromagnetic Compatibility.
Directive 2014/53/EU on Radio Equipment.
Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

The object of the declaration described above has been designed to comply with the following standards:
EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use. EMC requirements.
EN 300 328 V1.9.1 Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques;

The basis on which conformity is being declared:
The technical documentation required to demonstrate that the products meet the requirements of the above Directives has been compiled by the signatory below and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2021.

The authorised representative within the European Union (EU) is:
Francesco Frezza Snap-on Equipment S.r.l. Via Prov. Carpi, 33 42015 Correggio RE Italy

Signed for and on behalf of Norbar Torque Tools Ltd.

Signed:	T. M. Lester	**Full Name:**	Trevor Mark Lester B.Eng.
Date:	20 April 2021	**Authority:**	Compliance Engineer
Place:	Norbar Torque Tools Ltd., Wildmere Road, Banbury, Oxfordshire. OX16 3JU		

UK Declaration of Conformity (No 0037V0)

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration:
ProTronic® Plus Screwdriver. (Model: 130524).
Serial Number – All.

The object of the declaration described above is in conformity with the relevant UK statutory requirements:
Electromagnetic Compatibility Regulations 2016
Radio Equipment Regulations 2017
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

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BS EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use. EMC requirements.
ESTI EN 300 328 V1.9.1 Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques;

The basis on which conformity is being declared:
The technical documentation required to demonstrate that the products meet the requirements of the above legislation has been compiled by the signatory below and is available for inspection by the relevant enforcement authorities.

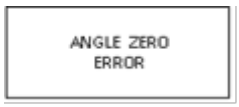
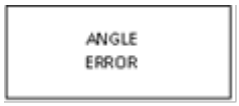
The UKCA mark was first applied in: 2021.

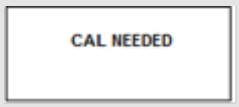
Signed for and on behalf of Norbar Torque Tools Ltd.

Signed:	T. M. Lester	**Full Name:**	Trevor Mark Lester B.Eng.
Date:	20 April 2021	**Authority:**	Compliance Engineer
Place:	Norbar Torque Tools Ltd., Wildmere Road, Banbury, Oxfordshire. OX16 3JU		

TROUBLESHOOTING

NOTE: If any of following issues persist, return tool to an authorised Norbar Repair Centre.

Issue	Possible Cause	Resolution
Tool does not turn on when **POWER** button pressed	Dead/No batteries	Replace batteries
	Software glitch	Cycle power using end-cap
Torque reading out of spec.	Calibration required	Recalibrate
	Incorrect head length entered	Enter correct offset head length
Tool did not retain settings while batteries were removed	Batteries removed before setting were saved in non-volatile memory	Clear data, re-enter settings and press and hold **POWER** button to power down tool before removing batteries
Buttons do not function	Keypad locked	Press the **ENTER** button to continue using tool and replace batteries soon
	Low battery	Press **ENTER** button to continue using tool and replace batteries soon
	Dead battery	Press **POWER** button to turn off tool and replace batteries
	Torque applied while zeroing	Remove torque and re-zero
	Tool over torqued	Recalibrate
	Tool improperly calibrated	Recalibrate
	Torque sensor failure	Return to Factory
	Tool moving during zeroing	Place tool on stable surface
	Gyro unstable	Return to Factory
	**ENTER** button pressed during angle zeroing (Aborted zeroing to access menus)	Press **POWER** button to re-zero
	Over 125% of full-scale torque applied	Cycle power using **POWER** button and recalibrate
	Tool rotated too fast during angle measurement	Press **POWER** button to re-zero

Issue	Possible Cause	Resolution
	Calibration interval exceeded or invalid date entered with calibration interval enabled	Calibrate tool or press **ENTER** ↵ to continue. Disable calibration interval if not required
	Memory error	Clear data memory. If persists, return to Factory
	Torque uncalibrated	Calibrate torque
	Angle uncalibrated	Calibrate angle

USE OF ADAPTORS, EXTENSIONS AND UNIVERSALS

Anytime an adaptor, extension or universal is used with a torque tool in such a way that fastener distance is different than torque tool square drive distance at calibration, an adjustment to head length is required to get a proper fastener torque reading.

When using wobble extension or a universal, do not exceed more than 15 degrees of offset from perpendicular drive.

CALIBRATION

Contact your Norbar sales representative for calibration services or refer to the ProTronic® Plus Calibration Manual.

IMPORTANT: CALIBRATION EVENTS ARE RECORDED IN TOOL MEMORY WHICH PROVIDES EVIDENCE TO VOID FACTORY CERTIFICATION.

MAINTENANCE / SERVICE

Clean tool by wiping with a damp cloth. DO NOT use solvents, thinners or carburettor cleaners.
DO NOT immerse in anything.

Service and repairs are to be done by Norbar Service Centre's only. Contact your Norbar representative.

Ratchet head repair kits can be ordered from a Norbar representative.

NOTES: **If display shows persistent "TORQUE ZERO ERROR" at power on, tool is damaged and must be returned for repair.**

If display shows "ANGLE ERROR" in angle mode, fastener rotation speed has exceeded capacity of tool.

Tool must be held still during angle zeroing. Motion is indicated by alternating dashes "- -" on display.

Remove battery when stored for extended periods (Note: clock will revert to default settings).

BATTERY REPLACEMENT

NOTE: **When replacing batteries, real-time-clock will maintain date and time for 20 minutes.**

NOTE: **Turn End Cap counter-clockwise to unscrew for large wrenches (100 – 800 N·m) and screwdriver, and clockwise for small wrenches (10 and 30 N·m).**

Batteries should be installed in carrier prior to carrier installation into screwdriver.
Battery negative contacts should be oriented with carrier springs.

Plus Versions:

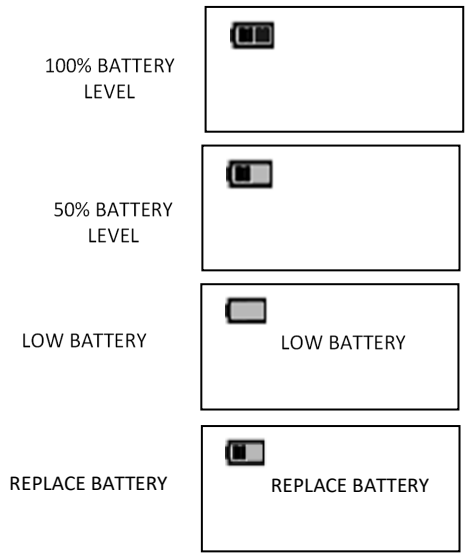
Unscrew end cap, insert new cells positive (+) end into handle first.

10 & 30 Versions:

Unscrew end cap, insert new cells negative (-) end into end cap.

Screwdriver Version:

Unscrew end cap, insert new cells negative (-) end into end cap.



NOTE: **When Replace Battery screen is displayed tool will no longer operate until batteries are replaced. Only POWER button functions which immediately turns off tool.**

MEMORY INDICATORS

DATA IN MEMORY		Less than 1500 torque and angle records stored in memory.
MEMORY FULL		1500 torque or angle records stored in memory. New records will not be recorded until memory is cleared.
MEMORY ERROR		Memory read or write error.

WIRELESS LINK INDICATORS

WIRELESS LINK DOWN		Wrench not connected to mobile device
WIRELESS LINK UP		Wrench connected to mobile device

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