



TECHANGLE®

ELECTRONIC TORQUE-ANGLE SCREWDRIVER

20-2105-SO Rev. B
21-11



SAFETY INSTRUCTIONS

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IMPORTANT SAFETY INSTRUCTIONS



WARNING *Risk of flying particles.*

Over-torquing can cause breakage. An out of calibration screwdriver can cause part or tool breakage. Broken hand tools, sockets or accessories can cause injury. Excess force can cause crowfoot or flare nut screwdriver slippage.

- ☐ **Read this manual completely before using ELECTRONIC SCREWDRIVER.**
- ☐ To ensure accuracy, work must not move in angle mode.
- ☐ For personal safety and to avoid screwdriver damage, follow good professional tool 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 screwdriver.
- ☐ Use correct size socket for fastener.
- ☐ Do not use sockets showing wear or cracks.
- ☐ Replace fasteners with rounded corners.
- ☐ **To avoid damaging screwdriver:** Never use screwdriver with power off. Always turn ON screwdriver so applied torque is being measured.
- ☐ Do not press **POWER**  while torque is applied or while screwdriver is in motion.
- ☐ Never use this screwdriver to break fasteners loose.
- ☐ Check that screwdriver capacity matches or exceeds each application before proceeding.
- ☐ Verify calibration if dropped.
- ☐ Verify calibration of screwdriver if you know or suspect its capacity has been exceeded.
- ☐ Always adjust your stance to prevent a possible fall should something give while using screwdriver.
- ☐ Do not attempt to recharge alkaline cells.
- ☐ Store screwdriver in dry place.
- ☐ Remove batteries when storing screwdriver used for periods longer than 3 months.



WARNING *Electrical Shock Hazard.*

Electrical shock can cause injury. Metal in handle is not isolated. Do not use on live electrical circuits.

SAVE THESE INSTRUCTIONS

Disclaimer

Operation of TECHANGLE® Screwdriver is not warranted in an EU member state if operating instructions are not in that State's language. Contact Snap-on if a translation is needed.

Specifications

Drive Type

- ¼” Hex Female
- ¼” Square Male

Display

- DISPLAY TYPE: Dot Matrix LCD (168 x 48 Resolution)
- VIEWING ANGLE: 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** – increments torque and angle settings and menu navigation
-  **DOWN** - decrements torque and angle settings and menu navigation
-  **UNITS** - units select (ft-lb, in-lb, in-oz, Nm, Kg-cm, cNm) and enter PSET (preset) 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 50 peak torque or peak torque/angle readings

Accuracy

- Temperature: @ 22 C (72°F)
- Angle: ±1% of reading ±1° @ angular velocity > 10°/sec < 180°/sec
- Torque:

	CW	CCW	
{	±2%	±3%	of reading, 20% to 100% of full scale
	±4%	±6%	of reading, 5% to 19% of full scale

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: Single "AA" Alkaline Cell, up to 20 hours continuous operation.
Lithium 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 Advanced Settings).

Static Dissipative (ESD) Properties: Surface Resistivity 10⁷ - 10¹⁰

User Instructions

• Basic Functions (Quick Start)

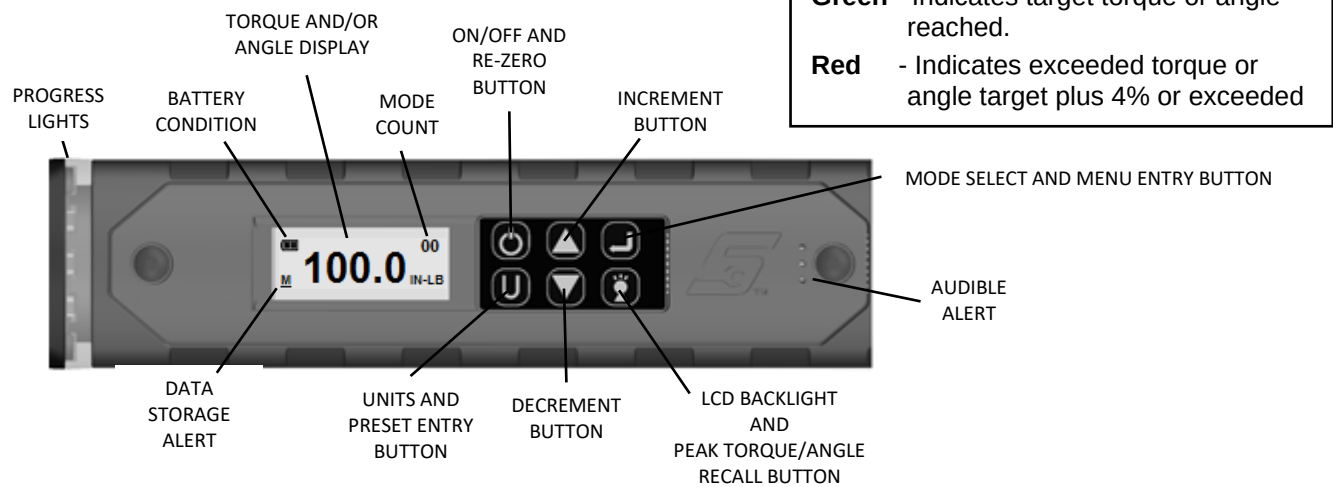


Figure 1

Install fresh Alkaline “AA” cell into handle of screwdriver.

Screwdriver Power On Sequence

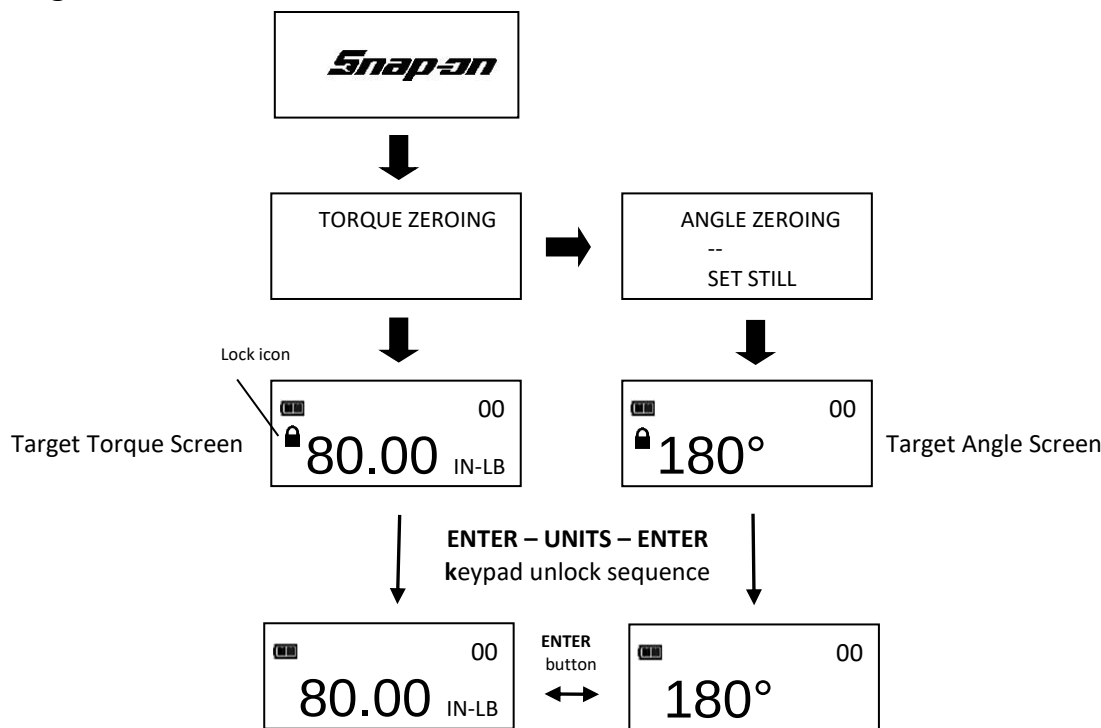
*Note: Do not turn on power to screwdriver while torque is applied, otherwise torque zero offset will be incorrect and screwdriver will indicate a torque reading when torque is released. If this occurs, re-zero screwdriver by momentarily pressing **POWER** button while screwdriver is on a stable surface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

1. Turn On Screwdriver.

While holding screwdriver still, momentarily press **POWER** button. Snap-on logo will be displayed followed by torque and angle re-zeroing screens (if angle mode has been previously selected). The target TORQUE or ANGLE screen will now be displayed depending on previous measurement mode selected.

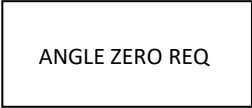
*Note: By simultaneously pressing the **ENTER** and **UNITS** buttons, the keypad can be locked to prevent inadvertent button presses while gripping the screwdriver body. The Lock Icon is displayed when the keypad is locked. To unlock the keypad, press the **ENTER** – **UNITS** – **ENTER** buttons in 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** – **ENTER** to become functional again.*



2. Select Measurement Mode.
Toggle between target TORQUE and ANGLE screens by repeatedly pressing **ENTER**  button.

Note: If screwdriver is powered up in torque only measurement mode, angle is not zeroed until keypad is unlocked and mode is changed to angle measurement mode. The Angle Zero Required screen will be displayed:



Angle zeroing begins automatically after 2 seconds. Screwdriver should be placed 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**  button while on target TORQUE screen until desired units are displayed.
3. Apply TORQUE.
Grasp center 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**  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.

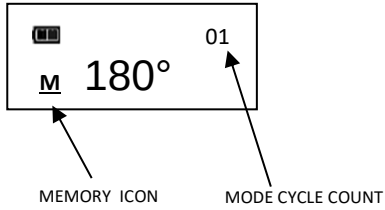
Angle Mode

*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 screwdriver must be placed on a stable surface. If **ENTER**  button is pressed before two seconds, screen will 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 Screwdriver.
Grasp center of handle and slowly apply torque to fastener and rotate screwdriver 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**  button will immediately return to target ANGLE screen. Reapplying torque (ratcheting) before target screen is displayed will continue ANGLE accumulation as screwdriver 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

Mode cycle count feature is used to indicate number of times screwdriver 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 increment 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 screwdriver 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.
- 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 Advanced Settings Section).
- CONFIGURE - Displays advanced configuration menu (see Advanced Configuration Section).

Viewing Stored Torque and Angle Data

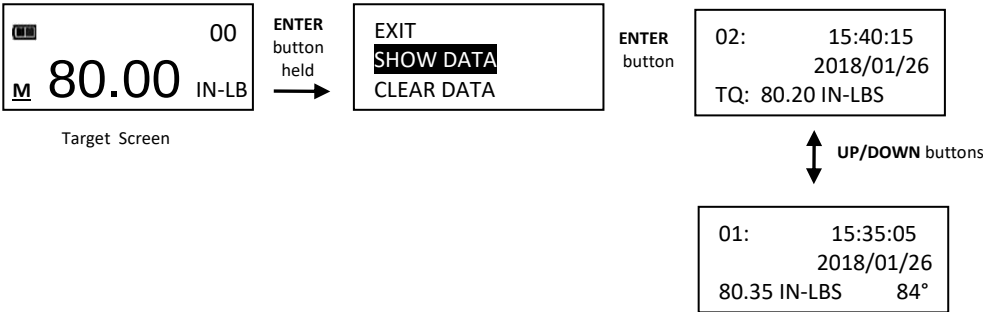
Torque data is stored in memory after each torque cycle if applied torque has reached target value. Torque and angle data is stored in memory after each angle cycle if applied angle has reached target value. Memory Indicator is displayed when data is stored in non-volatile memory.

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: 02 = Show Data List Counter: TQ = Peak torque value

01 = 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.

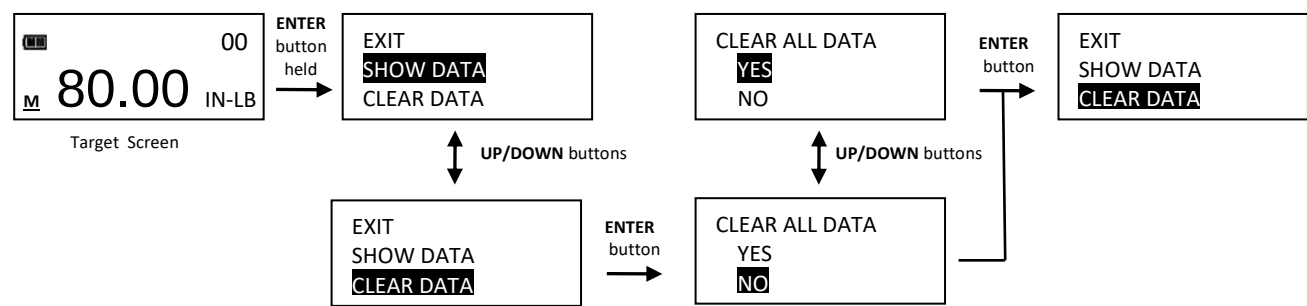


Note: A maximum of 50 data records can be stored in memory. Memory full icon will be displayed when full. New data is stored at number 50, moving older data down and bumping the oldest from location 01 until memory is cleared.

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

Deleting Stored Torque and Angle Data

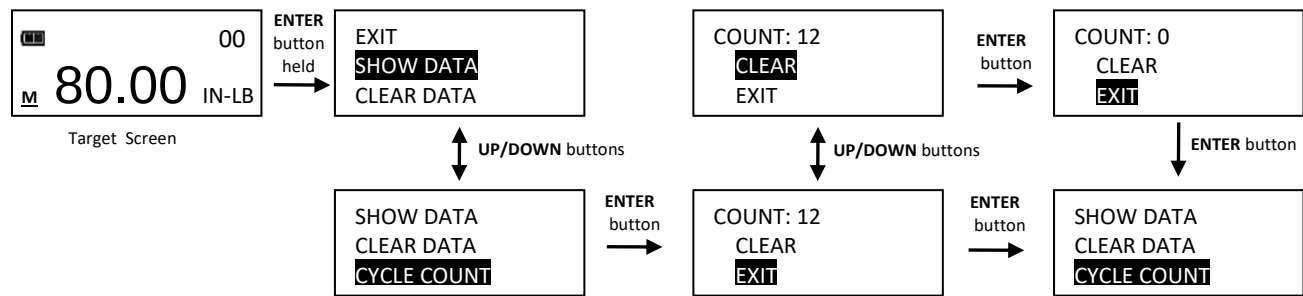
1. From target torque or angle screen, press and hold **ENTER** button for 3 seconds.
2. Highlight **CLEAR DATA** menu selection using **UP** / **DOWN** buttons then press **ENTER** button to display CLEAR ALL DATA screen.
3. In CLEAR ALL DATA screen, highlight **YES** menu selection to delete all stored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



Viewing and Clearing Screwdriver Cycle Counter

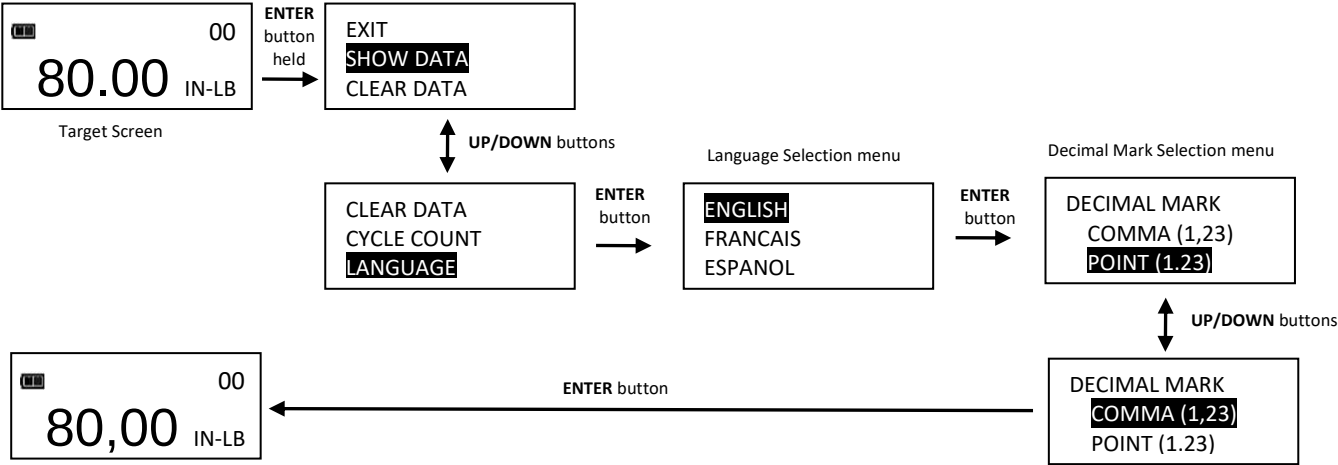
Each time torque or angle target is reached, screwdriver cycle counter is incremented. Maximum cycle count is 999999.

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 screwdriver 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.



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.

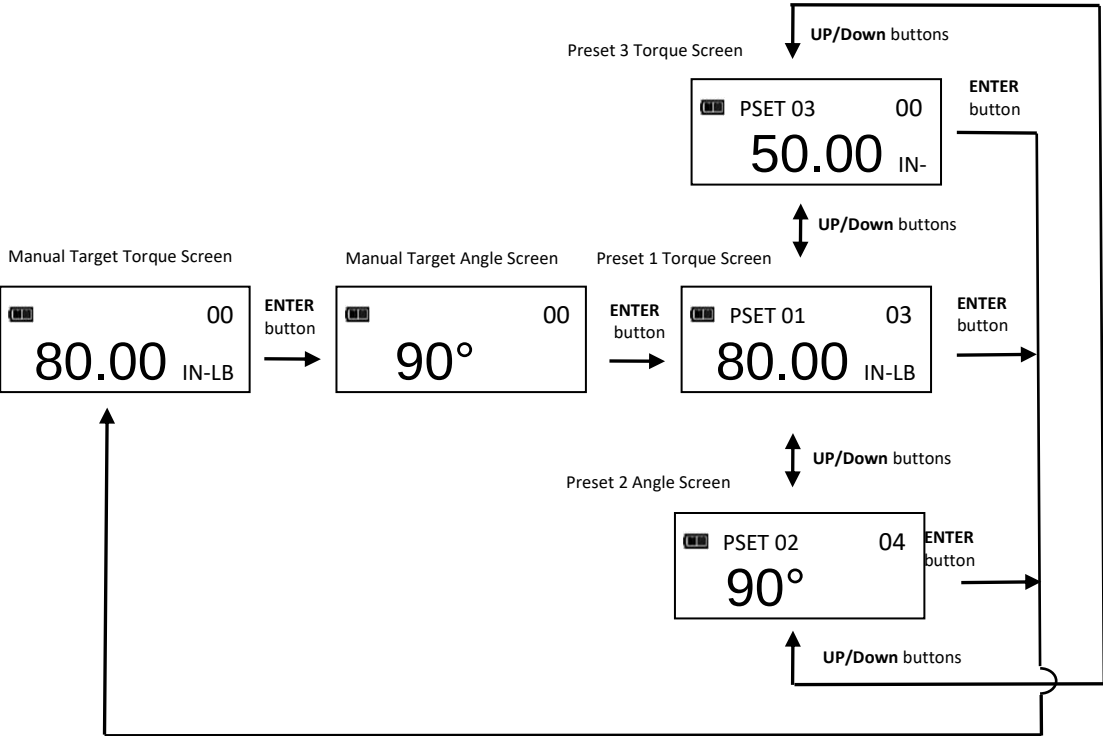


3. To exit Main menu and return to target torque or angle screen, press **ENTER** button while **EXIT** menu selection is highlighted.

Target Presets (PSET)

PSET function gives user ability to configure 10 preset 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.

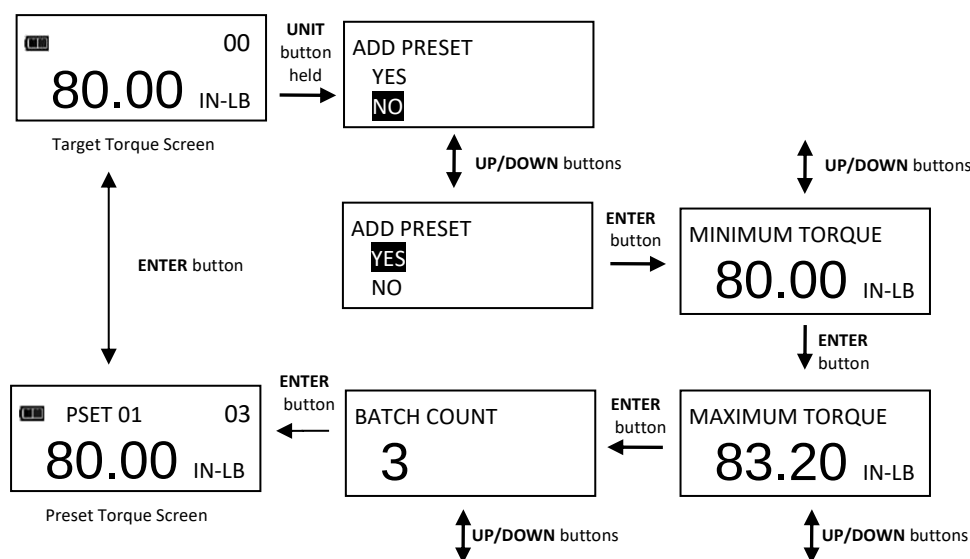
*Note: After adding a Preset (see below), navigate between manual target torque, angle mode and PSET screen by repeatedly pressing **ENTER** button. While PSET screen is displayed, press **UP** /**DOWN** buttons to select additional configured PSETs.*



Adding a Torque Preset

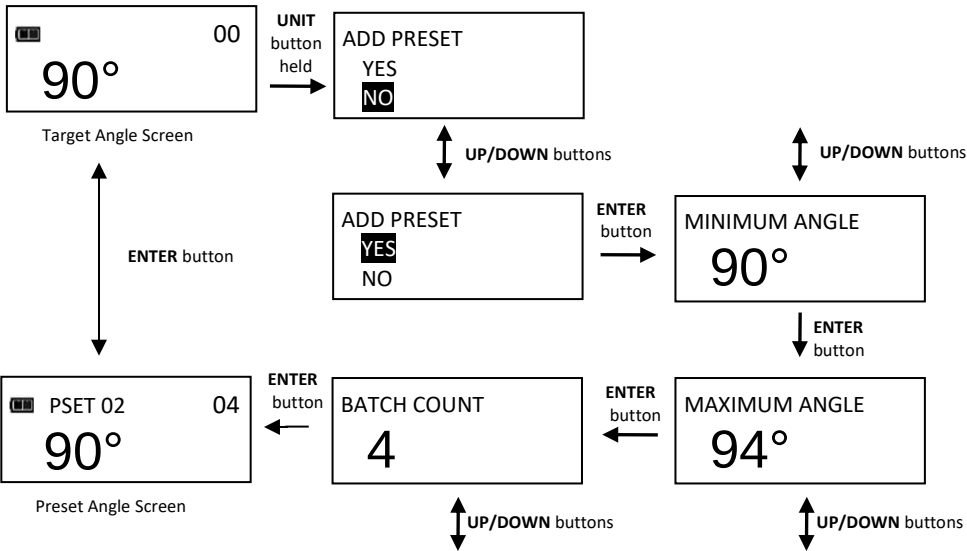
1. From manual target torque screen, select units of measure.
2. Press and hold **UNITS** button for 3 seconds.
3. ADD PRESET confirmation screen is displayed. Highlight **YES** menu selection using **UP** /**DOWN** buttons then press **ENTER** button. **NO** menu selection returns to main menu without adding a PSET.
4. 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 the manual TARGET TORQUE value. MINIMUM TORQUE can be set to any value from screwdriver minimum torque range to full scale torque range by pressing **UP** /**DOWN** buttons. Once desired minimum torque value has been set, press **ENTER** button.

5. 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 or MINIMUM TORQUE value (whichever is larger) plus 4%. Maximum torque value can be set greater than MINIMUM TORQUE value to 10% above screwdriver maximum range by pressing **UP** /**DOWN** buttons. Once desired maximum torque 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 increment/decrement batch count. Mode Count increments each time target torque is reached if a batch count of zero is entered. Mode Count decrements if a non-zero batch count is entered and resets to batch count value when count reaches zero. Once desired batch count value has been set, press **ENTER** button.
7. PSET target screen is displayed labeled with next available PSET number from 01 to 10.
8. To enter additional torque presets, repeatedly press **ENTER** button until target torque screen is displayed and repeat steps above.



Adding an Angle Preset

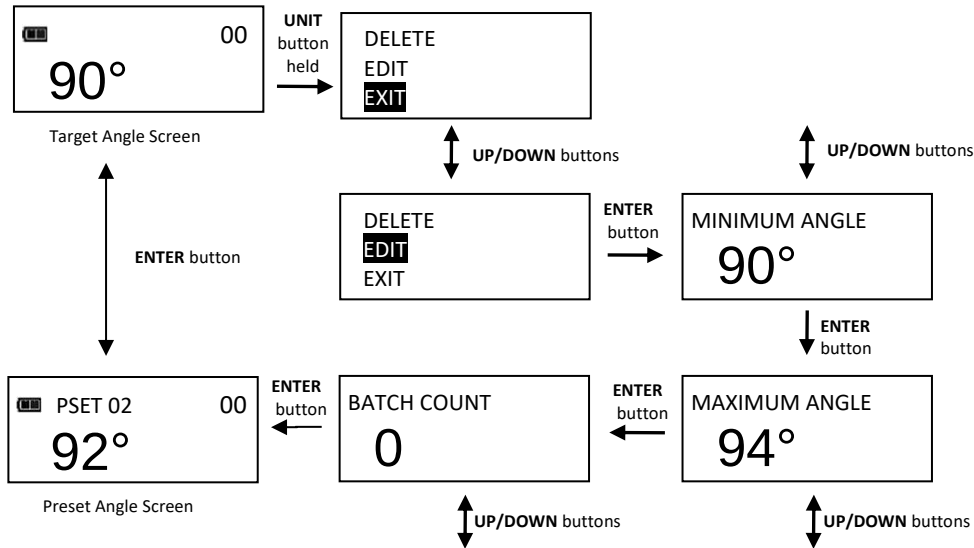
1. From manual target angle screen, press and hold **UNITS** button for 3 seconds.
2. ADD PRESET confirmation screen is displayed. Highlight **YES** menu selection using **UP** /**DOWN** buttons then press **ENTER** button. **NO** menu selection returns to main menu without adding a PSET.
3. MINIMUM 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 value. MINIMUM ANGLE can be set from 0 to 360° by pressing **UP** /**DOWN** buttons. Once desired minimum angle value has been set, press **ENTER** button.
4. 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 or MINIMUM ANGLE (whichever is larger) plus 4. MAXIMUM ANGLE value can be set to any value greater than MINIMUM ANGLE by pressing **UP** /**DOWN** buttons. Once desired value has been set, press **ENTER** button.
5. BATCH COUNT screen is displayed next. Default value is zero. Batch count range is 0 to 99. Press **UP** /**DOWN** buttons to increment/decrement batch count. Mode Count increments each time target angle is reached if a batch count of zero is entered. Mode Count decrements if a non-zero batch count is entered and resets to batch count value when count reaches zero. Once desired batch count value has been set, press **ENTER** button.
6. PSET target screen is displayed labeled with next available PSET number from 01 to 10.
7. To enter additional angle presets, repeatedly press **ENTER** button until target angle screen is displayed and repeat steps above.



Editing a Preset

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

1. From Preset screen to be edited, press and hold **UNITS U** button for 3 seconds.
2. CHANGE PRESET screen is displayed.
3. Highlight **EDIT** selection using **UP ▲/DOWN ▼** buttons then 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 labeled with same PSET number.

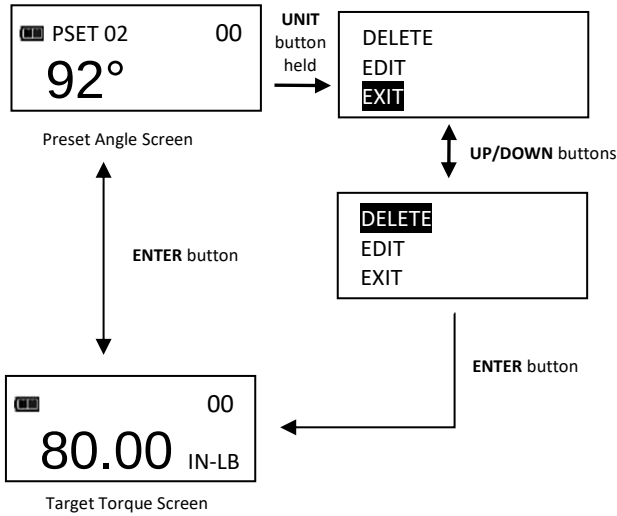


*Note: Pressing **ENTER ↵** button while **EXIT** menu selection is highlighted will exit without editing PSET.*

Deleting a Preset

Delete PSET function allows user to remove stored presets from screwdriver.

- 1. From Preset screen to be deleted, press and hold **UNITS U** button for 3 seconds.
- 2. CHANGE PRESET screen is displayed.
- 3. Highlight **DELETE** menu selection using **UP ▲**/**DOWN ▼** buttons and press **ENTER ↵** button.
- 4. 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 deleting 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.

● Advanced Settings

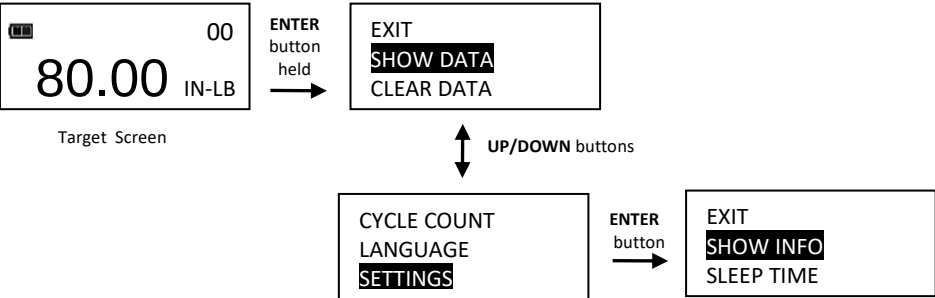
Accessing Advanced Settings

Advanced 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 screwdriver 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 **BACKLIGHT** 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.
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 screwdriver operational information.

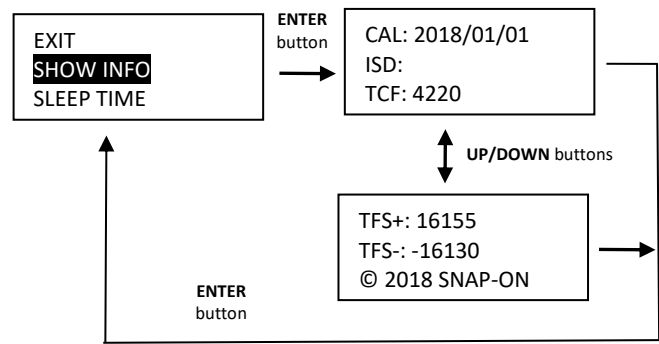
- 1. From Settings menu, press **ENTER**  button while **SHOW INFO** selection is highlighted.
- 2. SHOW INFO screen is displayed.
- 3. **UP** /**DOWN**  buttons are used to scroll screen.

Operational Information:

- CAL: Date of last screwdriver calibration.
- ISD: In-Service Date (remains blank until real-time-clock set).
- TCF: Torque Calibration Factor.
- ACF: Angle Calibration Factor.
- VER: Software version.
- OVR CNT: Overtorque Counter tracks how many times an over-torque event occurred on screwdriver (torque >125% of full scale).
- TQZ: Torque Zero Offset.
- ANZ: Angle Zero Offset.
- AFS+: Angle Zero Offset at CW Torque Full Scale.
- AFS-: Angle Zero Offset at CCW Torque Full Scale.
- TFS+: CW Torque Full Scale.
- TFS-: CCW Torque Full Scale.

- Copyright

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



Setting Sleep Time

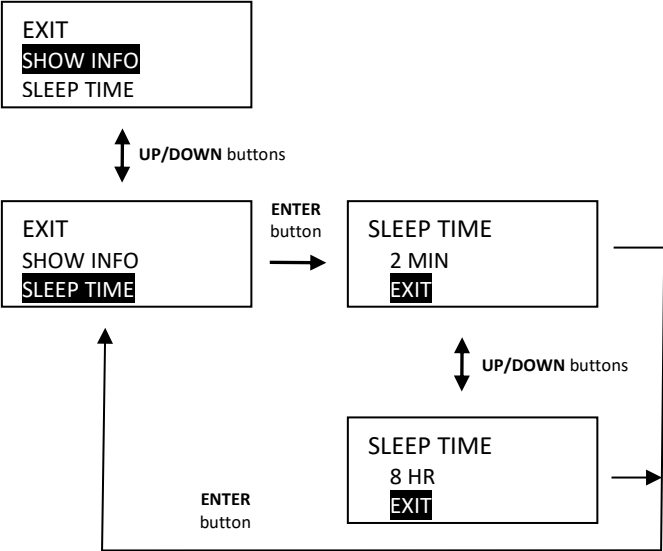
This function will allow user to set interval screwdriver enters power-down state following last applied torque or button press.

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.



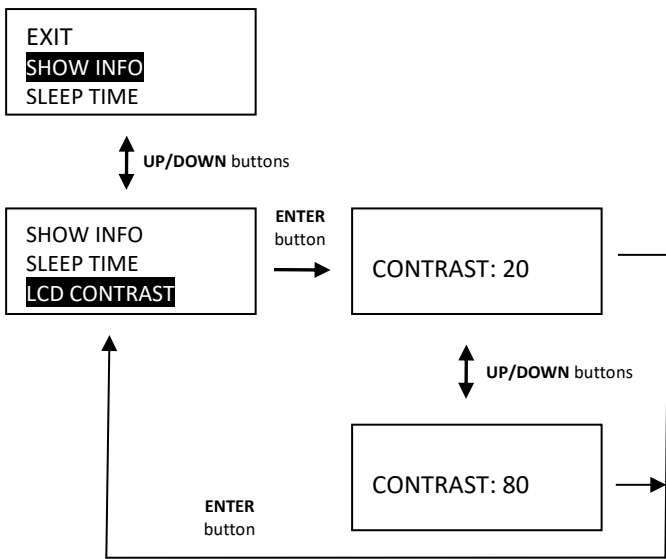
Setting LCD Contrast

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).

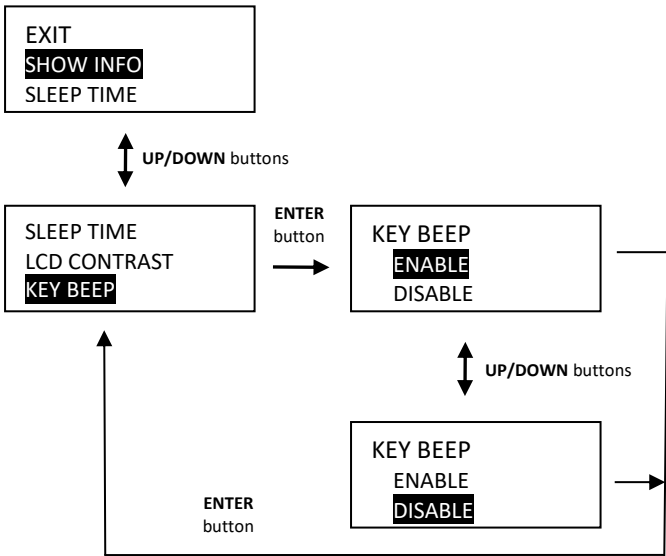
4. Press **ENTER**  button to accept selection and exit to Settings menu.



Key Beep Setup

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

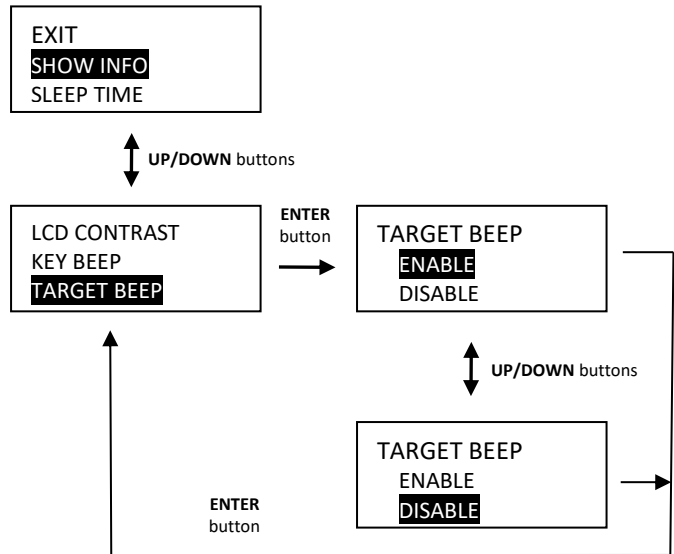
1. From Settings menu, use **UP ▲**/**DOWN ▼** buttons to highlight **KEY BEEP** selection then press **ENTER ◀** button.
2. KEY BEEP screen is displayed.
3. Use **UP ▲**/**DOWN ▼** buttons to highlight ENABLE (factory default) or DISABLE selection.
4. Press **ENTER ◀** button to accept selection and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



Target Beep Setup

This function will allow user to enable or disable audio feedback when target torque or angle is reached. Audio feedback occurs on torque or angle over range (red LED) regardless of this setting.

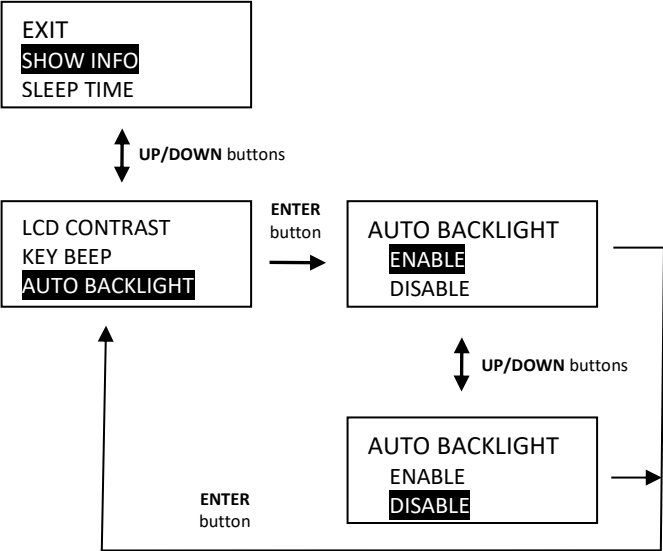
1. From Settings menu, use **UP ▲**/**DOWN ▼** buttons to highlight **TARGET BEEP** selection then press **ENTER ◀** button.
2. TARGET BEEP screen is displayed.
3. Use **UP ▲**/**DOWN ▼** buttons to highlight ENABLE (factory default) or DISABLE selection.
4. Press **ENTER ◀** button to accept selection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

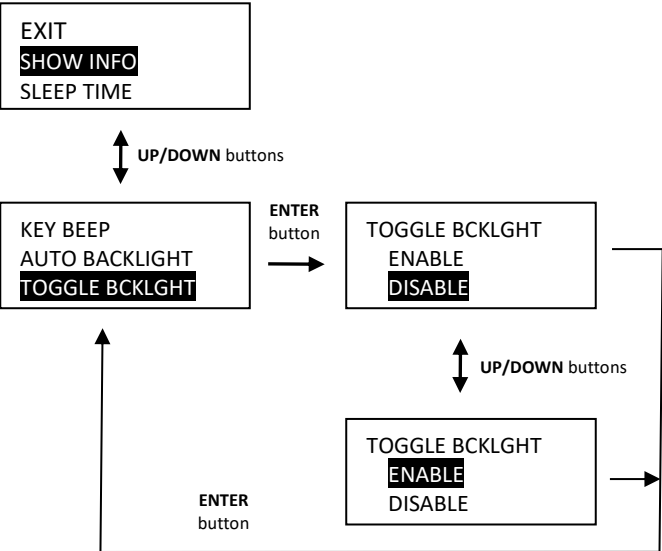
- 1. From Settings menu, use UP ▲/DOWN ▼ buttons to highlight AUTO BACKLIGHT selection then press ENTER ↵ button.
- 2. AUTO BACKLIGHT screen is displayed.
- 3. Use UP ▲/DOWN ▼ buttons to highlight ENABLE (factory default) or DISABLE selection.
- 4. Press ENTER ↵ button to accept selection and exit to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



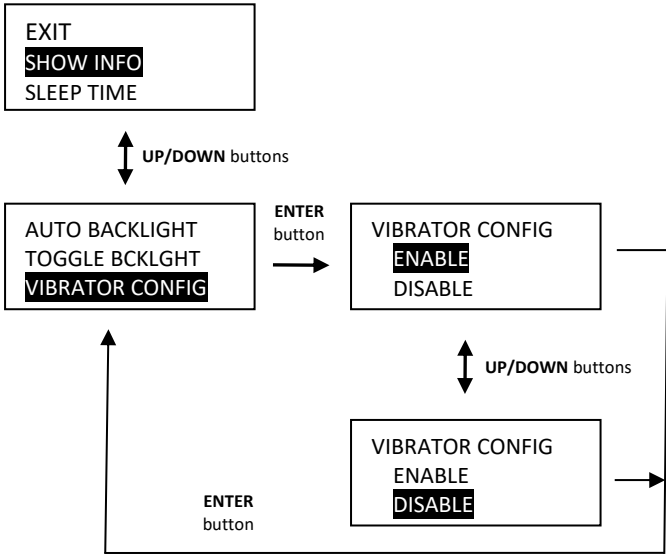
*Note: Backlight will turn off when screwdriver powers down either by **POWER** ⏻ button press or sleep time.*

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.

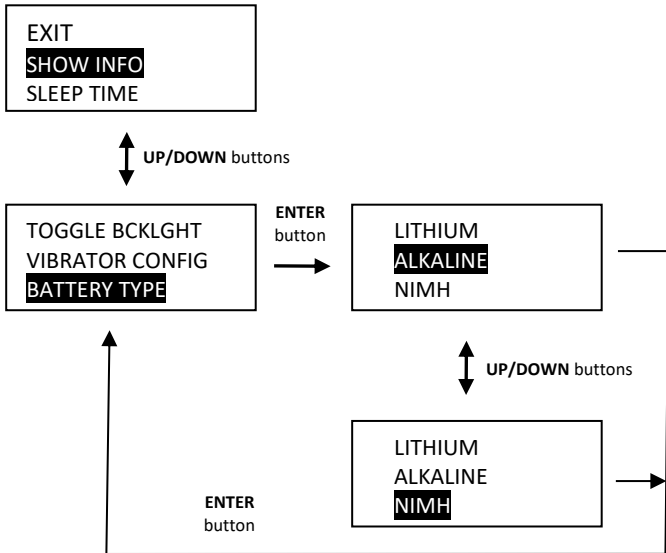
- 1. From Settings menu, use **UP ▲**/**DOWN ▼** buttons to highlight **VIBRATOR CONFIG** selection then press **ENTER ↵** button.
- 2. VIBRATOR CONFIG screen is displayed.
- 3. Use **UP ▲**/**DOWN ▼** buttons to toggle ON or OFF selection.
- 4. Press **ENTER ↵** button to accept selection and exit to 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: Screwdriver is configured for Alkaline battery shipped from factory. If Alkaline battery is replaced with Lithium 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.

● Advanced Configuration

Accessing Advanced Configuration

Advanced configuration is accessed from **CONFIGURE** menu selection on main menu.

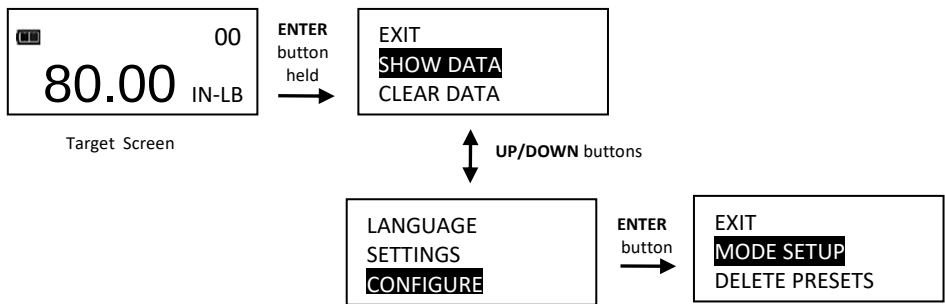
Note: If screwdriver has been locked (see Preset Lock and Job Mode), a password entry is required to enter Configure menu.

- 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 screwdriver mode setup menu.
- DELETE PRESETS - Displays delete all presets menu.
- CALIBRATION - Displays screwdriver calibration menu (password protected).
- SET DATE/TIME - Displays clock date and time entry screens.
- SET CAL INTRVAL - Displays calibration interval setup screen (requires clock date and time setup).

- 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

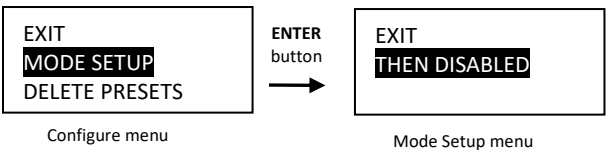
Mode setup menu allows user configure target torque and angle minus and plus tolerances and enable/disable Torque THEN Angle mode and Torque AND angle mode.

- 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.
- THEN DISABLED - Displays THEN Mode enable/disable screen.

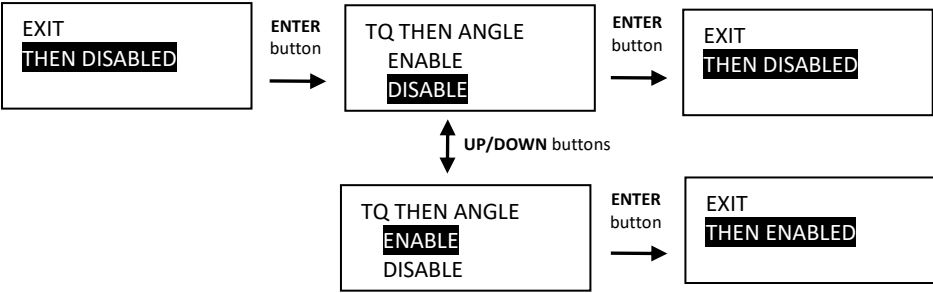
- 3. Use **UP**/**DOWN** buttons to highlight menu selections.
- 4. Press **ENTER** button while **EXIT** menu selection is highlighted to return to Configure menu.



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.

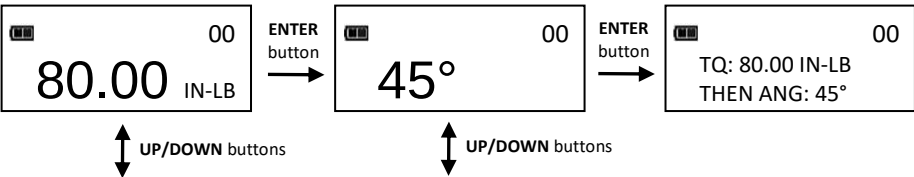


Note: Menu selection indicates current configuration (ENABLED or DISABLED).

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, screwdriver 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** 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 screwdriver to target angle.



Note: **UNITS** 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.

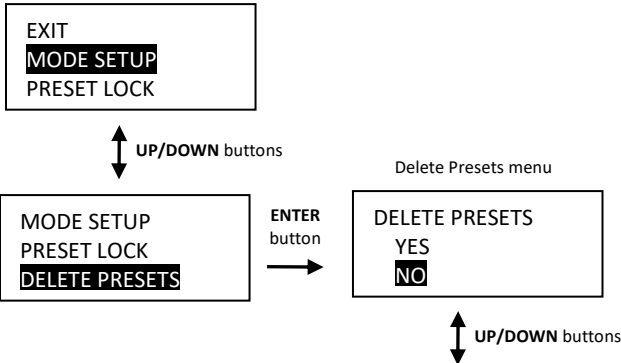
Note: Red progress lights turn on if torque exceeds 110% of screwdriver full scale or if angle exceeds target + plus tolerance while in manual mode.

Note: Torque THEN Angle Presets are entered by pressing and holding **UNITS** button while on Torque THEN Angle screen. MAXIMUM TORQUE defaults to full range plus 10%. Refer to "Adding a Torque Preset" and "Adding an Angle Preset" in Basic section for parameter entry.

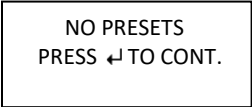
Delete Presets

Delete Presets function allows user to delete all presets at once.

- 1. From Configure menu, use **UP** /**DOWN** buttons to highlight **DELETE PRESET** selection then press **ENTER** button.
- 2. Delete Presets 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 Presets is selected without a Preset configured, following screen is displayed:



Calibration

Calibration menu is password protected. Refer to *TECHANGLE® Calibration manual*.



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.

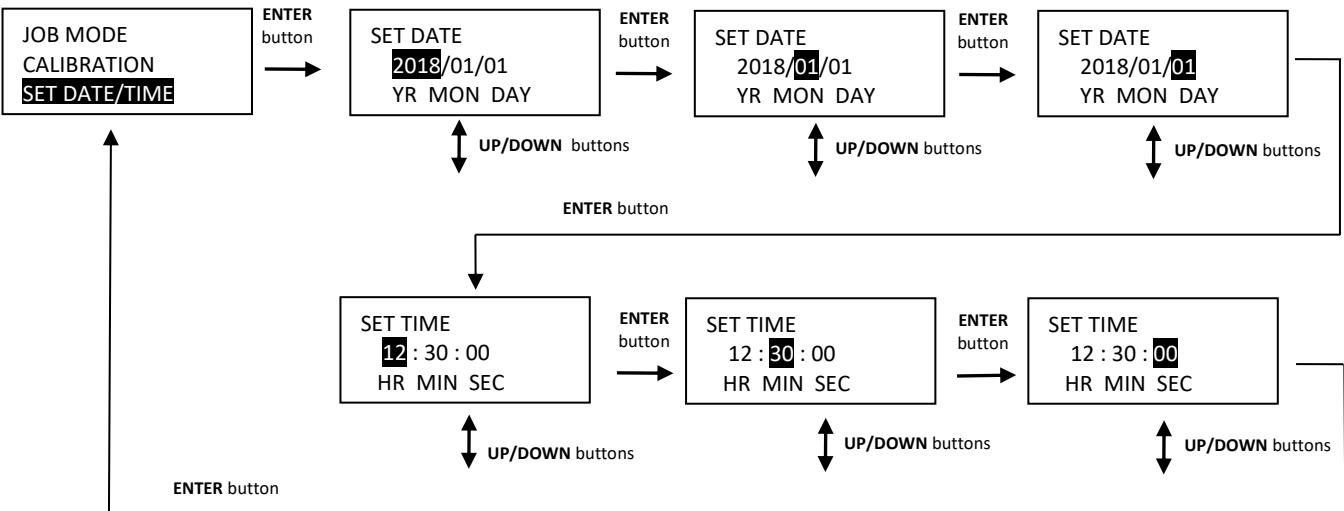
Note: When date and time is set for first time, In-Service date is also set and is used for calculating initial calibration interval (see "Setting Calibration Interval" in Advanced Configuration section).

- 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 2014. 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 screwdriver for longer than 20 minutes, clock will revert to default settings and must be re-entered at power on.



Setting Calibration Interval

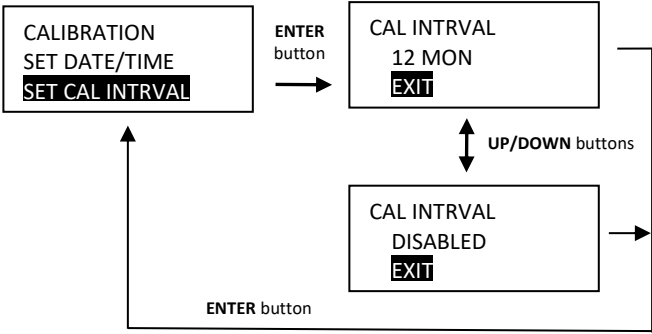
This function will allow user to set calibration interval for when "CAL NEEDED" message will be displayed.

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 screwdriver for longer than 20 minutes, clock will revert to default settings and must be re-entered at power on.

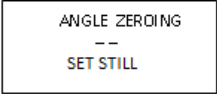
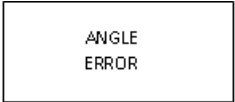
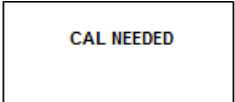
*Note: Calibration interval is calculated from either IN-Service Date or last Calibration date (see SHOW INFO menu) depending on which is more recent date. When clock Date is greater than IN-Service or Last Calibration date, plus Cal Interval, "CAL NEEDED" message will be displayed on power up and after a re-zero. Pressing **ENTER ↵** button will continue to target menu. Applying torque while "CAL NEEDED" message is displayed will immediately display torque or angle measurement and return to target menu when released.*

Note: As an alternative to calibration interval, a Calibration Cycle Counter is provided in Calibration menu (Refer to TECHANGLE® Calibration manual regarding Calibration menu). Each time a measurement cycle reaches target torque, calibration cycle counter is incremented. When torque is recalibrated, calibration counter is automatically reset to zero. User can disable calibration interval check and use number of cycles since last calibration to decide when to recalibrate.

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.

● Troubleshooting

Note: If any of following issues persist, return screwdriver to an authorized Snap-on repair center.

Issue	Possible Cause	Resolution
Screwdriver 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
Screwdriver 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 screwdriver before removing batteries.
Buttons do not function.	Keypad locked.	Press the ENTER  button followed by the UNITS  button then the ENTER  button again.
	Low battery	Press ENTER  button to continue using screwdriver and replace batteries soon.
	Dead battery	Press POWER  button to turn off screwdriver and replace batteries.
	Torque applied while zeroing	Remove torque and re-zero
	Screwdriver over torqued	Recalibrate
	Screwdriver improperly calibrated	Recalibrate
	Torque sensor failure	Return to Factory
	Screwdriver moving during zeroing	Place screwdriver 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
	Screwdriver rotated too fast during angle measurement	Press POWER button to re-zero
	Calibration interval exceeded or invalid date entered with calibration interval enabled	Calibrate screwdriver or press ENTER  to continue. Disable calibration interval if not required.
	Memory error	Clear data memory. If persists, return to Factory

Issue	Possible Cause	Resolution
 TORQUE UCAL	Torque uncalibrated	Calibrate torque
 ANGLE UCAL	Angle uncalibrated	Calibrate angle

● CALIBRATION

Contact your Snap-on sales representative for calibration services or refer to **TECHANGLE® Screwdriver Calibration Manual**.

● CERTIFICATION

This torque screwdriver was calibrated at factory using torque measurement instruments that are traceable to National Institute of Standards and Technology (N.I.S.T.). Torque parameters comply with ISO 6789:2003 and ASME B107:300-2010 (B107.29). Note: no U.S. or International Standards exist for angle screwdrivers. Angle calibration was performed on an angle gage with ±1 degree accuracy at each 45 degree indexing point throughout 180 degrees of rotation.

IMPORTANT!

Calibration events are recorded in screwdriver memory which provides evidence to void factory certification.

● MAINTENANCE / SERVICE

Clean screwdriver by wiping with a damp cloth. DO NOT use solvents, thinners or carburetor cleaners. DO NOT immerse in anything.
 Service and repairs are to be done by Snap-on Service Centers only. Contact your Snap-on Tools representative.

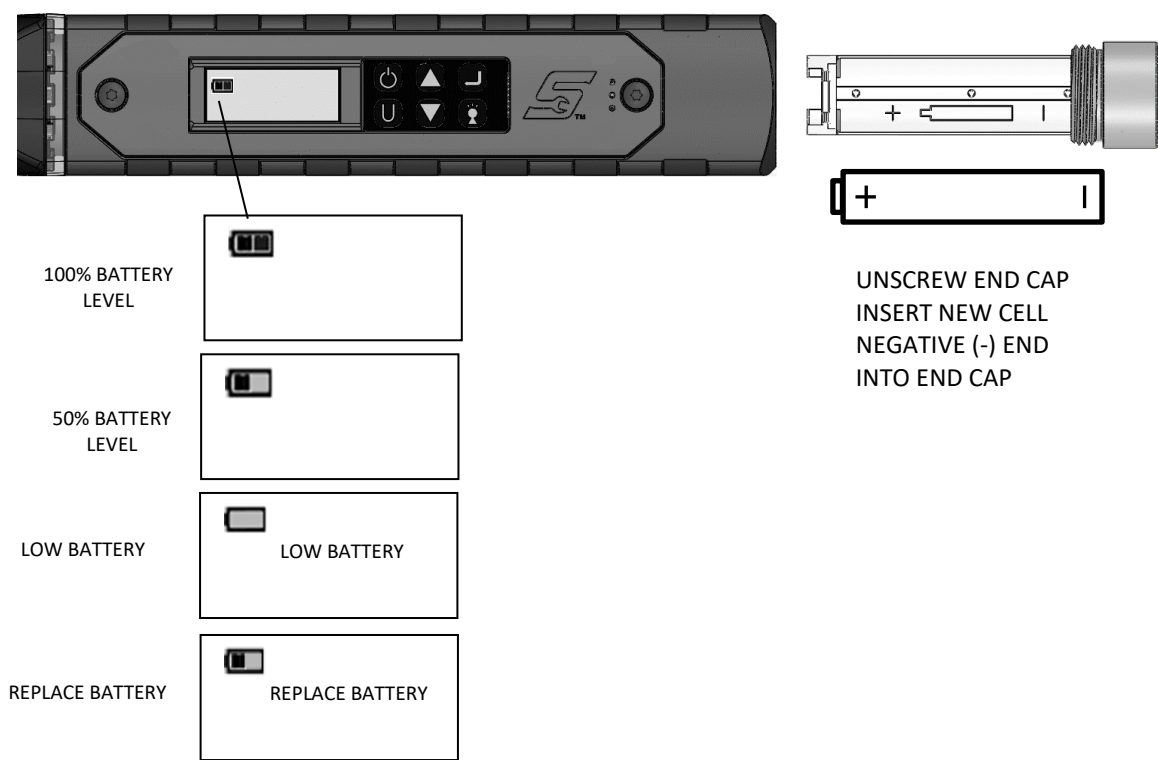
- NOTES:
- If display shows persistent "**TORQUE ZERO ERROR**" at power on, screwdriver is damaged and must be returned for repair
 - If display shows “**ANGLE ERROR**” in angle mode, fastener rotation speed has exceeded capacity of screwdriver.
 - Screwdriver must be held still during angle zeroing. 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 battery, real-time-clock will maintain date and time for 20 minutes.

Note: Turn Battery End Cap clockwise to unscrew.

Battery should be installed in carrier prior to carrier installation into screwdriver.
Battery negative contact should be oriented towards carrier spring.



*Note: When Replace Battery screen is displayed screwdriver will no longer operate until battery is replaced. Only **POWER**  button functions which immediately turns off screwdriver.*

● Memory Indicators

DATA IN MEMORY		Less than 50 torque and angle records stored in memory.
MEMORY FULL		50 torque or angle records stored in memory. New records will not be recorded until memory is cleared.
MEMORY ERROR		Memory read or write error.

● OPTIONAL/AVAILABLE ACCESSORIES

- MSTECHHDL Extension Handle
- GMB3042 ¼" Hex to ¼" Ball Detent Square Adaptor (2 inch)
- GMB3046 ¼" Hex to ¼" Ball Detent Square Adaptor (6 inch)
- GMB3041 ¼" Hex Insert to Ball Detent Square Adaptor (1 inch)
- TMC109A ¼" Square to ¼" Ball Detent Hex Locking Collet
- TMBS8A ¼" Chrome Square Socket w/ ¼" Hex Opening
- TMXK2 ¼" Chrome Extension (2 inch)
- TMXK4 ¼" Chrome Extension (4 inch)
- TMXK60 ¼" Chrome Extension (6 inch)
- TA3 Chrome Square Drive Adaptor, ¼" to 3/8" Square Drive
- Insert bits
 - Phillips: SDM221C- PH#1
 - Phillips: SDM222CZ- PH#2
 - Torx: SDMT6A- T6
 - Torx: SDMT7A- T7
 - Torx: SDMT8D- T8
 - Torx: SDMT9D- T9
 - Torx: SDMT10D- T10
 - Torx: SDMT15D- T15
 - Torx: SDMT20D- T20
 - Pozi: SDM251C- PZ#1
 - Pozi: SDM252C- PZ#2
 - Square: BTS0- SQ#0
 - Square: BTS1- SQ#1
 - Square: BTS2- SQ#2
 - Dbl Square: BTSS2- DSQ#2
 - Hex: SDM2704D- 1/16"
 - Hex: SDM2705D- 5/64"
 - Hex: SDM2706D- 3/32"
 - Hex: SDM2707D- 7/64"
 - Hex: SDM2708D- 1/8"
 - Hex: SDM2709D- 9/64"
 - Hex: SDM2710D- 5/32"
 - Hex: SDM2712D- 3/16"
 - Hex: SDM2716D- ¼"
 - Met Hex: SDMM2702B- 2mm
 - Met Hex: SDMM27025B- 2.5mm
 - Met Hex: SDMM2703B- 3mm
 - Met Hex: SDMM2704C- 4mm
 - Met Hex: SDMM2705C- 5mm
 - Met Hex: SDMM2706C- 6mm
 - Valve: SDMV208- N/a

IMPORTANTES INSTRUCTIONS DE SECURITE



DANGER : *Risque de projection de particules.*

L'application d'un couple excessif peut entraîner une rupture. L'utilisation d'un tournevis mal étalonné peut entraîner une rupture de la pièce ou de l'outil lui-même. Des outils, douilles ou accessoires endommagés peuvent provoquer des blessures.

- ☐ Lire l'intégralité de ce manuel avant d'utiliser la TOURNEVIS ELECTRONIQUE.
- ☐ Lors du travail en mode d'angle, la pièce doit rester immobile afin de garantir la précision de l'outil.
- ☐ Afin de garantir votre sécurité personnelle, ainsi que pour éviter d'endommager ce tournevis, suivre à la lettre les bonnes pratiques professionnelles de travail relatives à l'utilisation des outils et à l'installation de systèmes de fixation.
- ☐ Un ré-étalonnage périodique est nécessaire pour maintenir le niveau de précision.
- ☐ **L'utilisateur et les personnes situées à proximité doivent porter des lunettes de sécurité.**
- ☐ S'assurer que tous les composants, incluant tous les adaptateurs, prolongateurs, les douilles et les douilles supportent un couple égal ou supérieur au couple employé.
- ☐ Respecter scrupuleusement l'ensemble des avertissements, des recommandations de prudence ainsi que les procédures énoncées par le fabricant pour l'ensemble des équipements et des systèmes associés avant d'utiliser ce tournevis dynamométrique.
- ☐ Ne pas utiliser de douilles qui présenteraient des signes d'usure ou des fissures.
- ☐ Remplacer les dispositifs de fixation si leurs angles sont arrondis.
- ☐ **Afin d'éviter d'endommager du tournevis** : ne jamais utiliser ce tournevis lorsqu'elle est hors tension. Toujours METTRE LA CLE SOUS TENSION afin que le couple appliqué puisse être mesuré.
- ☐ Ne pas appuyer sur le bouton « **MARCHE/ARRET** »  pendant une opération de serrage ou lorsque le tournevis est en mouvement.
- ☐ Ne jamais utiliser ce tournevis pour desserrer un système d'attache.
- ☐ Vérifier au cas par cas que la capacité de serrage du tournevis est égale, ou dépasse, les besoins spécifiques à l'application considérée avant l'utilisation proprement dite.
- ☐ Vérifier l'étalonnage si l'outil fait une chute sur le sol.
- ☐ Vérifier l'étalonnage du tournevis si vous savez ou que vous suspectez qu'elle a été utilisée au-delà de ses spécifications.
- ☐ Ajuster votre posture pour éviter une chute dans le cas d'une rupture.
- ☐ Ne jamais **tenter derecharger des piles alcalines.**
- ☐ Entreposer le tournevis dans un endroit sec.
- ☐ Retirer les piles avant d'entreposer le tournevis pour des périodes supérieures à 3 mois.



DANGER *Risque de décharge électrique.*

Une décharge électrique peut entraîner des blessures. Le manche en plastique n'est pas isolé. Ne pas utiliser sur des circuits électriques sous tension.

CONSERVER CES INSTRUCTIONS

Dégagement de responsabilité

L'emploi de ce tournevis TECHANGLE® n'est pas garanti à l'intérieur d'un état membre de l'Union Européenne si les instructions de fonctionnement ne sont pas dans la langue de l'état en question. Contacter Snap-on si vous avez besoin d'une traduction.

INSTRUCCIONES DE SEGURIDAD IMPORTANTES



ADVERTENCIA *Riesgo de partículas despedidas.*

El exceso de torsión puede provocar roturas. Un destornillador acodado mal calibrado puede producir la rotura de la herramienta o de parte de ella. El uso de herramientas manuales, tubos o accesorios rotos pueden ocasionar lesiones.

- ☐ Lea la **totalidad de este manual** antes de utilizar el DESTORNILLADOR ELECTRÓNICA
- ☐ Para asegurar la precisión, el movimiento no debe realizarse en ángulo.
- ☐ Por motivos de seguridad personal y para evitar dañar el destornillador, siga las prácticas profesionales aceptadas para el uso de herramientas e instalación de piezas de fijación.
- ☐ Será necesario recalibrar la herramienta de forma periódica para asegurar su precisión.
- ☐ **Utilice gafas de seguridad, tanto para usted como para los observadores.**
- ☐ La capacidad nominal de todos los componentes, incluidos los adaptadores, las extensiones, los destornilladores y los tubos, deberá ser mayor o igual al par de torsión que se quiere aplicar.
- ☐ Cuando utilice el destornillador, respete todas las advertencias, precauciones y procedimientos del equipo, el sistema y el fabricante.
- ☐ Utilice un tubo del tamaño adecuado para la pieza de fijación.
- ☐ No use tubos desgastados o agrietados.
- ☐ Reemplace las piezas de fijación con esquinas redondeadas.
- ☐ **Para no dañar el destornillador:** nunca la use apagada. ENCIÉNDALA siempre para medir el par de torsión que se ejerce.
- ☐ No oprima el botón de **ENCENDIDO**  mientras el destornillador aplica torsión o está en movimiento.
- ☐ No utilice el destornillador para extraer piezas de fijación atascadas.
- ☐ Antes de comenzar, compruebe que la capacidad nominal del destornillador sea mayor o igual a la aplicación.
- ☐ Si se le cae la herramienta, verifique la calibración.
- ☐ Verifique la calibración si sabe o sospecha que se superó su capacidad.
- ☐ Ajuste tu posición para no caerse si algo cede.
- ☐ No intente recargar las pilas alcalinas.
- ☐ Mantenga el destornillador en un lugar seco.
- ☐ Retire las baterías si no va a utilizar el destornillador por períodos superiores a 3 meses.



ADVERTENCIA *Riesgo de descarga eléctrica.*

Las descargas eléctricas pueden producir lesiones. El mango de plástico no está aislado. No utilizar en circuitos eléctricos activos.

CONSERVE ESTAS INSTRUCCIONES

Descargo de responsabilidad

El funcionamiento del destornillador TECHANGLE® no está garantizado en los países miembros de la UE si las instrucciones de funcionamiento no figuran en el idioma del país en cuestión. Póngase en contacto con Snap-on si necesita una traducción.

WICHTIGE SICHERHEITSHINWEISE



WARNUNG Gefahr von herumfliegenden Partikeln.

Ein Überdrehen kann zum Bruch führen. Ein Schraubendreher außerhalb der Kalibrierung kann zur Beschädigung des Werkstücks oder Werkzeugs führen. Defekte Hand-Werkzeuge, Stecknüsse oder Zubehörteile können zu Verletzungen führen.

- ☐ Vor dem Gebrauch des ELEKTRONISCHER SCHRAUBENDREHER ist **diese Anleitung vollständig** durchzulesen.
- 
 - ☐ Um die Genauigkeit zu gewährleisten, darf sich das Werkstück im Winkelmodus nicht bewegen.
 - ☐ Zur persönlichen Sicherheit und Vermeidung von Beschädigung des Schraubendreher ist ein sorgfältiger Umgang mit Werkzeugen und Befestigungsmitteln erforderlich.
 - ☐ Zur Erhaltung der Genauigkeit ist eine regelmäßige Kalibrierung notwendig.
 - ☐ **Der Benutzer und umstehende Personen sollten Schutzbrillen tragen.**
 - ☐ Sicherstellen, dass alle Komponenten einschließlich aller Adapter, Verlängerungen, Antriebsteile und Stecknüsse mindestens für die aufgewandten Drehmomente geeignet sind.
- 
 - ☐ Beim Gebrauch dieses SchraubenSchraubendreher sind alle Geräte-, System- und Hersteller-Warnhinweise, Vorsichtsmaßnahmen und Verfahren zu beachten.
 - ☐ Eine Stecknuss der richtigen Größe für das Befestigungselement verwenden.
 - ☐ Keine Stecknüsse mit Anzeichen von Verschleiß oder Rissen verwenden.
 - ☐ Befestigungselemente mit abgerundeten Ecken ersetzen.
 - ☐ **Zur Vermeidung von Schäden am Schraubendreher:** Den Schraubendreher keinesfalls im ausgeschalteten Zustand verwenden. Zuerst stets den Schraubendreher einschalten, damit das aufgebrachte Drehmoment gemessen wird.
- 
 - ☐ Nicht die Taste **EIN/AUS**  betätigen, während ein Drehmoment aufgebracht wird oder der Schraubendreher in Bewegung ist.
 - ☐ Den Schraubendreher keinesfalls zum Losbrechen von Befestigungselementen verwenden.
 - ☐ Vor Gebrauch sicherstellen, dass die Kapazität des Schraubendrehers für den Anwendungsfall ausreichend ist.
 - ☐ Wurde der Schraubendreher fallen gelassen, muss die Kalibrierung überprüft werden.
 - ☐ Die Kalibrierung des Schraubendreher kontrollieren, falls seine Kapazität vermutlich überschritten wurde.
 - ☐ Einen sicheren Stand einnehmen, um nicht zu stürzen, falls eine Komponente nicht standhält.
 - ☐ Die Alkalibatterien nicht wiederaufzuladen versuchen.
 - ☐ Den Schraubendreher an einem trockenen Ort aufbewahren.
 - ☐ Die Batterien entfernen, wenn der Schraubendreher länger als 3 Monate gelagert werden soll.



WARNUNG Gefahr eines elektrischen Schlags.

Ein elektrischer Schlag kann zu Verletzungen führen. Der Kunststoffgriff ist nicht isoliert. Nicht an spannungsführenden Leitungen verwenden.

BEWAHREN SIE DIESE ANLEITUNG AUF

Haftungsausschluss

Es besteht keine Garantie für den Betrieb des TECHANGLE® Schraubendrehers in einem EU-Mitgliedstaat, wenn die Betriebsanweisungen nicht in der betreffenden Landessprache abgefasst sind. Wenden Sie sich an Snap-on, wenn eine Übersetzung benötigt wird.

ISTRUZIONI CAUTELARI IMPORTANTI



AVVERTENZA *Pericolo di schegge vaganti.*

Un serraggio eccessivo può causare rotture. Il cacciavite calibrata erroneamente potrebbe provocare la rottura de pezzo in lavorazione o dell'utensile. Utensili manuali, bussole o accessori rotti possono provocare infortuni.



- ☐ Leggere **attentamente questo manuale** prima di utilizzare il CACCIAVITE ELETTRONICA.
- ☐ Per garantire la precisione, il movimento di lavoro non deve essere angolare.
- ☐ Per la propria incolumità e per evitare di danneggiare il cacciavite, seguire le direttive di categoria per il serraggio delle viti e la meccanica professionale.
- ☐ Per mantenerne la precisione, è necessario ricalibrare l'utensile periodicamente.
- ☐ **È necessario che l'operatore e le persone circostanti indossino appositi occhiali di sicurezza.**
- ☐ Verificare sempre che tutti i componenti, compresi eventuali riduttori, prolunghes, alberini e bussole, siano omologati per una coppia uguale o superiore a quella applicata.
- ☐ Durante l'utilizzo di questo utensile, rispettare sempre tutte le indicazioni e istruzioni cautelari fornite dai rispettivi produttori di accessori e impianti.
- ☐ Per il serraggio, utilizzare sempre una bussola di dimensione adatta per quella vite.
- ☐ Non utilizzare bussole che presentino segni di usura o di rottura.
- ☐ Sostituire le viti con bordi smussati.
- ☐ **Per evitare di danneggiare il cacciavite:** non usare mai il cacciavite quando è spenta. Accenderla sempre per poter misurare la coppia di serraggio applicata a ogni uso.



- ☐ Non premere il tasto **ALIMENTAZIONE**  quando il cacciavite è in tiro o in movimento.
- ☐ Non utilizzare mai questo cacciavite per allentare viti, dadi e bulloni.
- ☐ Prima di procedere, controllare che la portata del cacciavite corrisponda o superi quella richiesta per il lavoro.
- ☐ In caso di caduta accidentale, controllare la calibrazione.
- ☐ Controllare la calibrazione del cacciavite anche al solo sospetto che sia stata ecceduta la sua portata.
- ☐ Rimanere sempre in equilibrio anche nell'eventualità di un cedimento.
- ☐ Non tentare di ricaricare le celle delle batterie alcaline.
- ☐ Conservare sempre il cacciavite in un luogo asciutto.
- ☐ Estrarre sempre le batterie quando si conserva un cacciavite per un periodo superiore a tre mesi.



AVVERTENZA *Rischio scosse elettriche.*

Le scosse elettriche possono causare infortuni. Il manico in plastica non è isolato.

Non utilizzare su circuiti elettrici sotto tensione.

CONSERVARE QUESTE ISTRUZIONI

ESONERO DI RESPONSABILITÀ:

Non si garantisce l'uso della Cacciavite TECHANGLE® nei Paesi membri della CEE dove le istruzioni per l'uso non sono in lingua locale. Contattare la Snap-on per l'eventuale traduzione.

BELANGRIJKE VEILIGHEIDSINSTRUCTIES



WAARSCHUWING *Risico van wegvliegende fragmenten.*

Te ver aandraaien kan breuk veroorzaken. Een verkeerd gekalibreerde schroevendraaier kan breuk van onderdelen of gereedschappen veroorzaken. Defecte handgereedschappen, doppen en accessoires kunnen letsel veroorzaken.

- ☐ Lees deze handleiding **helemaal** door voordat u de ELEKTRONISCHE SCHROEVEDRAAIER gebruikt.
- ☐ Voor een nauwkeurige prestatie mag het werkstuk in de hoekmodus niet bewegen.
- ☐ Volg voor uw persoonlijke veiligheid en om beschadiging van de schroevendraaier te voorkomen altijd de juiste professionele methoden bij het gebruik van gereedschappen en de installatie van bevestigingsmateriaal.
- ☐ Voor het behoud van de nauwkeurigheid is regelmatige kalibratie vereist.
- ☐ **Draag een veiligheidsbril, dit geldt zowel voor gebruiker als omstanders.**
- ☐ Zorg dat alle componenten (inclusief verloopstukken, verlengstukken, schachten en doppen) ten minste zijn goedgekeurd voor het gebruikte koppel.
- ☐ Neem bij gebruik van deze schroevendraaier alle waarschuwingen, aandachtspunten en procedures voor de apparatuur, voor het systeem en van de fabrikant in acht.
- ☐ Gebruik doppen van de juiste maat voor het bevestigingsmateriaal.
- ☐ Gebruik nooit doppen die versleten of gebarsten zijn.
- ☐ Vervang bevestigers waarvan de hoeken gestript zijn.
- ☐ **Voorkom beschadiging van de schroevendraaier:** Gebruik de schroevendraaier nooit terwijl hij is uitgeschakeld. Zet de schroevendraaier altijd AAN zodat het uitgeoefende koppel wordt gemeten.



- ☐ Druk niet op **STROOM**  terwijl u iets aantrekt of terwijl de schroevendraaier beweegt.
- ☐ Gebruik deze schroevendraaier nooit om bevestigers met geweld los te halen.
- ☐ Controleer of de capaciteit van de schroevendraaier voldoende is voor het beoogde gebruik voordat u aan de slag gaat.
- ☐ Controleer de kalibratie als de schroevendraaier is gevallen.
- ☐ Controleer de kalibratie van de schroevendraaier als u weet of vermoedt dat de capaciteit ervan is overschreden.
- ☐ Ga zo staan dat u niet kunt vallen als een onderdeel plotseling meegeeft.
- ☐ Probeer niet om de alkaliceelbatterijen op te laden.
- ☐ Bewaar de schroevendraaier op een droge plaats.
- ☐ Verwijder de batterijen als u de schroevendraaier langer dan 3 maanden opbergt.



WAARSCHUWING *Gevaar van elektrische schokken.*

Elektrische schokken kunnen letsel veroorzaken. De kunststof greep is niet geïsoleerd.

Niet gebruiken op onder stroom staande circuits.

BEWAAR DEZE GEBRUIKSAANWIJZING

Disclaimer

Er geldt geen garantie voor het gebruik van de TECHANGLE®-schroevendraaier in lidstaten van de EU als de gebruiksaanwijzing niet in de taal van het land in kwestie beschikbaar is. Neem contact op met Snap-on voor vertalingen.

INSTRUÇÕES DE SEGURANÇA IMPORTANTES



ATENÇÃO *Risco de projeção de partículas.*

O torque excessivo pode causar ruptura. Uma chave de fenda descalibrada pode quebrar peças ou ferramentas. Ferramentas manuais, soquetes ou acessórios quebrados podem causar ferimentos.

- ☐ Leia **este manual completamente** antes de usar o CHAVE DE FENDA ELETRÔNICO.
- ☐ Para garantir a precisão, não se deve movimentar o chave de fenda no modo de ângulo.
- ☐ Para a segurança pessoal e para evitar danos ao chave de fenda, siga as boas práticas profissionais para o uso de ferramentas e a instalação de peças de fixação.
- ☐ A recalibragem periódica é necessária para manter a precisão.
- ☐ **Use óculos de proteção, seja como usuário ou espectador.**



- ☐ Certifique-se de que todos os componentes, inclusive todos os adaptadores, extensões, chaves de fenda e soquetes, sejam regulados para aguentar o torque aplicado.

- ☐ Cumpra todos os avisos, cuidados e procedimentos de equipamentos, sistemas e fabricantes quando utilizar este chave de fenda.

- ☐ Use um soquete de tamanho correto para a peça de fixação.

- ☐ Não utilize soquetes desgastados ou rachados.

- ☐ Substitua as peças de fixação com bordas arredondadas.

- ☐ **Para evitar danos ao chave de fenda:** Nunca utilize o chave de fenda desligado. Sempre LIGUE o chave de fenda para que o torque aplicado seja medido.



- ☐ Não aperte o botão **LIGA/DESLIGA**  ao aplicar torque ou enquanto o chave de fenda estiver em movimento.

- ☐ Nunca utilize o chave de fenda para soltar peças de fixação.

- ☐ Verifique se o chave de fenda é capaz de resistir a cada aplicação antes de prosseguir.

- ☐ Verifique a calibragem se a ferramenta cair.

- ☐ Verifique a calibragem do chave de fenda caso saiba ou suspeite que sua capacidade foi excedida.

- ☐ Ajuste sua postura para impedir uma possível queda caso algo ceda.

- ☐ Não tente recarregar as pilhas alcalinas.

- ☐ Guarde o chave de fenda em local seco.

- ☐ Remova as pilhas quando for guardar o chave de fenda por mais que 3 meses.



AVISO *Risco de choque elétrico.*

O choque elétrico pode causar ferimentos. O punho plástico não é isolante. Não utilize em circuitos elétricos energizados.

GUARDE ESTAS INSTRUÇÕES

Aviso de isenção de responsabilidade

A operação do chave de fenda TECHANGLE® não é permitida em nenhum Estado-membro da União Europeia se as instruções operacionais não estiverem no idioma do Estado em questão. Entre em contato com a Snap-on se uma tradução for necessária.

Snap-on Tools Company

EC Declaration of Conformity



The undersigned representing the following supplier:

Snap-On Specialty Tools
19220 San Jose Ave.
City of Industry, CA 91748
USA

Herewith declare that the Products:

Brand: Snap-on
Series: TechAngle® Screwdriver
Models: ATECHMS80F ATECHMS80M ATECHMS100F ATECHMS100M
SPP1803 SPP1804

These products are in conformity with the provisions of the following EC directives (and their amendments) when installed in accordance with the installation instructions contained in the product documentation.

2014/30/EU	- EMC Directive
2011/65/EU	- Restriction of certain hazardous substances (RoHS)
2012/19/EU	- Waste electrical and electronic equipment (WEEE)

And that the standards referenced below have been applied:

EN 61326-1:2013	Electrical Measurement, Control and Laboratory Equipment, EMC requirement Part 1 -General Requirement
EN 55011:2016 + A11:2020	Industrial, scientific and medical equipment. Radio-frequency disturbance characteristics. Limits and methods of measurement - Radiated Emissions
EN 61000-4-2:2009	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test
EN IEC 61000-4-3:2020	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-8:2010	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Year of CE marking: 2021

Company Authorized to Compile the Technical File:
Snap-on Tools Company
2801 80th Street
Kenosha, WI 53141-1410, USA

Authorized Representative within the European Union (EU) is:
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Snap-on Equipment
Via Prov. Carpi, 33
42015 Correggio RE
Italy

Signature: 
Director, Engineering: Nathan Lee
Snap-on Specialty Tools
19220 San Jose Avenue
City of Industry, CA 91748
November 2021

Snap-on Tools Company
UK Declaration of Conformity

The undersigned representing the following supplier:

Snap-on Specialty Tools
19220 San Jose Ave.
City of Industry, CA 91748
USA



Herewith declare that the Products:

Brand: Snap-on
Series: TechAngle® Screwdriver
Models: ATECHMS80F ATECHMS80M ATECHMS100F ATECHMS100M
SPP1803 SPP1804

These products are in conformity with the provisions of the following UK Statutory Instruments (and their amendments) when installed in accordance with the installation instructions contained in the product documentation.

2016 No. 1091	The Electromagnetic Compatibility Regulations 2016
2012 No. 3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
2013 No. 3113	The Waste Electrical and Electronic Equipment Regulations 2013

And that the standards referenced below have been applied:

BS EN 61326-1:2013	Electrical Measurement, Control and Laboratory Equipment, EMC requirement Part 1 -General Requirement
BS EN 55011:2016 + A11:2020	Industrial, scientific and medical equipment. Radio-frequency disturbance characteristics. Limits and methods of measurement - Radiated Emissions
BS EN 61000-4-2:2009	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test
BS EN IEC 61000-4-3:2020	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test
BS EN 61000-4-8:2010	Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test
BS EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Year of UKCA marking: 2021

Company Authorized to Compile the Technical File:
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Snap-on Tools LTD.
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NN16 8SN
United Kingdom

Signature: 
Director, Engineering: Nathan Lee
Snap-on Specialty Tools
19220 San Jose Avenue
City of Industry, CA 91748
November 2021

AUTHORIZED SNAP-ON REPAIR CENTERS

USA

Eastern Repair Center
6320 Flank Drive
Harrisburg, PA 17112
Phone: 717-652-7914
Fax: 717-652-7123

Northern Repair Center
3011 E. State Rt. 176, Dock A
Crystal Lake, IL 60014
Phone: 815-479-6850
Fax: 815-479-6857

Western Repair Center
3602 Challenger Way
Carson City, NV 89706-0753
Phone: 775-883-8585
Fax: 775-883-8590

CANADA

Western Repair Centre
7403-48 Street SE
Calgary, Alberta
Canada, T2C-4H6
Phone: 403-720-0525
Fax: 403-720-0524

INTERNATIONAL

United Kingdom Repair Center
Telford Way
Telford Way Industrial Estate
Kettering, Northants
NN16 8UN England
Phone: 44-1-536-413855
Fax: 44-1-536-413900

Australia Repair Centre
Snap-on Tools Australia
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Arndell Park NSW 2148
Australia
Phone: 61-2-9837-9155
Fax: 61-2-9837-9192

Singapore Repair Center
Snap-on Tools Singapore
Pte Ltd
25 Tagore Lane, #01-01,
Singapore, 787602
Phone: 65-64515570
Fax: 65-64515574

Japan Repair Center
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Koto-ku, Tokyo 136-0082
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China Repair Center:
Snap-on Asia Manufacturing
(Kunshan) Co. Ltd.
500 Tong Feng Road East
Kunshan, Jiangsu 215300,
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Phone: 86-51257708282 ext.
2068

Korea Repair Center:
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#201-205, Sambo Techno
Tower 122
Jomaru-ro 385beon-gil,
Bucheon, Gyeonggi-do
Republic of Korea 14556.
Phone: 82-323267310
Fax: 82-323267312

India Repair Center:
Snap-on Tools Private Limited
Gat No 2328, Ganga Retreat
Club Road
Off Nagar Road
Wagholi, Pune - 413207
India.

IMPORTANT ENVIRONMENTAL NOTES:



- 1. THIS EQUIPMENT MAY CONTAIN HAZARDOUS MATERIALS WHICH CAN BE HARMFUL TO THE ENVIRONMENT.
- 2. DO NOT DISPOSE OF THIS EQUIPMENT AS MUNICIPAL WASTE. RETURN IT TO DISTRIBUTOR OR A DESIGNATED COLLECTION CENTER

THANK YOU FOR CARING ABOUT OUR ENVIRONMENT!

Snap-on Tools Company
Kenosha, WI 53141-1410 USA



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