OWNER'S MANUAL

Digital Screwdriver

SD Series
SP Series

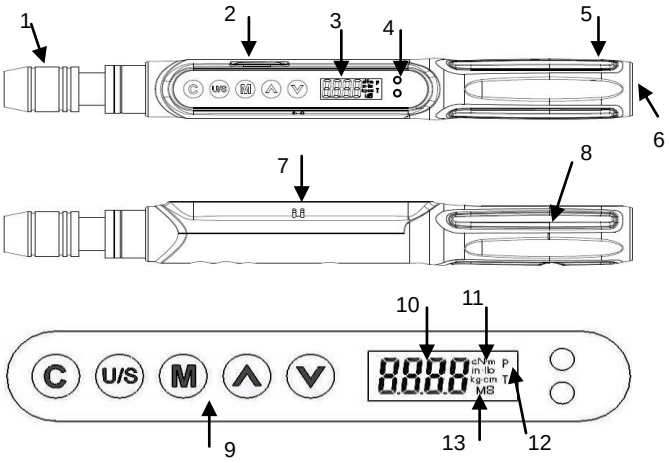
Dear Users

Thank you for using digital screwdriver. This manual will help you to use the many features of your new digital screwdriver. **Before operating the screwdriver, please read this manual completely**, and keep it nearby for future reference.

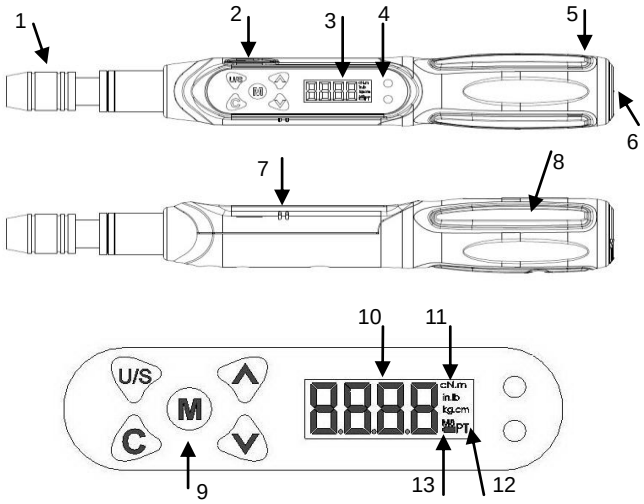
MAIN FEATURES

- Digital torque value readout
- +/- 2.5% or +/- 3% accuracy
- CW and CCW operation
- Peak hold and track mode selectable
- Buzzer and LED indicator for the 9 pre-settable target torques
- Engineering units(cN-m, in-lb, kg-cm) selectable
- 50 or 250 data memory for recall and joint torque auditing
- Communication functions
- Auto power off after about 5 minutes idle
- Rechargeable batteries are compatible

NAMES AND FUNCTIONS OF PARTS



1. Autolock Bit Holder
2. Communication Port
3. LCD Readout
4. LED Indicator
5. Anti-slip Handle
6. Battery Cover
7. Buzzer
8. Calibration mark
9. Buttons
10. Torque Value
11. Units
12. Peak/Track Mode
13. Memory Number



1. Autolock Bit Holder
2. Communication Port
3. LCD Readout
4. LED Indicator
5. Anti-slip Handle
6. Battery Cover
7. Buzzer
8. Calibration mark
9. Buttons
10. Torque Value
11. Units
12. Peak/Track Mode
13. Memory Number

SELECTION GUIDE

◯, 1 ◯, 2 ◯, 3

MODEL NO:

◯, 1	◯, 2	◯, 3
SD-05 **SD-2** **SD-4** **SP-05** **SP-2** **SP-4**	**B** **C**	**N** **U**

◯, 1 :

Model	Bit end fitting (inches)	Max. operation torque
SD-05	**1/4**	**50 cN-m / 4.42 in-lb / 5.1kg-cm**
SP-05		
SD-2	**1/4**	**200 cN-m / 17.7 in-lb / 20.41 kg-cm**
SP-2		
SD-4	**1/4**	**400 cN-m / 35.39 in-lb / 40.82 kg-cm**
SP-4		

◯, 2 :

Accuracy	
B	**2.5%-CW / 3.5%-CCW**
C	**±3%-CW / ±4%-CCW**

◯, 3 :

Communication	
N	**No**
U	**USB**

SPECIFICATIONS

Model No.	Resolution (cN-m)	Measured Torque Range (cN-m)	Length (mm)
SD-05	**0.1**	**5~50**	**193**
SP-05			**203**
SD-2	**0.1**	**10~200**	**193**
SP-2			**203**
SD-4	**0.1**	**20~400**	**193**
SP-4			**203**

All Models				
Accuracy *1	CN	CU	BN	BU
	CW：±3% CCW：±4%		CW：±2.5% CCW：±3.5%	
Data memory size	50	250	50	250
PC Connectivity *2	No	Yes	No	Yes
Pre-Setting No.	9 sets			
Bright LED	2 LED (1 Red+1 Green)			
Operation Mode	Peak hold/Track			
Unit Selection	cN-m, in-lb, kg-cm			
Head Type	Autolock bit holder			
Button	5			
Battery	AAA x 1			
Battery Life *3 (Continuous operation)	12 hrs.			
Battery Life *3 (Standby)	1 Year			
Operating Temperature	-10℃ ~ 60℃			
Storage Temperature	-20℃ ~ 70℃			
Humidity	Up to 90% non-condensing			
Drop Test	1 m			
Vibration Test *4	10G			
Life time *5	10000 cycle			
Environmental test *6	Pass			
Electromagnetic compatibility test *7	Pass			

* **:** See note on page 5

Note:

*1: The accuracy of the readout is guaranteed from 20% to 100% of maximum range + /- 1 increment. The torque accuracy is a typical value. Calibration point is on the rubber grip. For keeping the accuracy, calibrate the screwdriver for a constant period time (1 year).

*2: Use a special designed cable (accessory) to upload record data to PC.

*3: Use one AAA batteries (Test condition: Toshiba carbon-zinc battery)

*4: Horizontal and vertical test.

*5: One cycle means twist the screwdriver from 0 cN-m to maximum range and back to 0 cN-m.

*6: Environmental test:

a. Dry heat
b. Cold
c. Damp heat
d. Change of temperature
e. Impact (shock)
f. Vibration
g. Drop

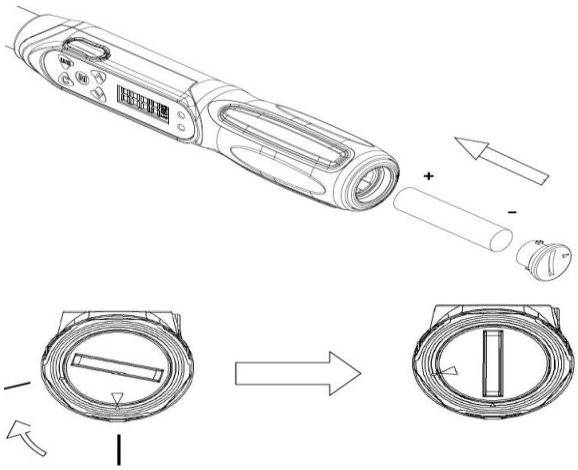
*7: Electromagnetic compatibility test:

a. Electrostatic discharge immunity (ESD)
b. Radiated susceptibility
c. Radiated emission

BEFORE USING THE SCREWDRIVER

BATTERY INSTALLATION

- Remove the battery cap.
- Insert one AAA batteries matching the -/+ polarities of the battery to the battery compartment.
- Put on the battery cap and fasten it tightly according to the following figures.



POWER ON AND RESETTING THE SCREWDRIVER

- Press C to power on the digital screwdriver.
- Usually press C to reset the digital screwdriver before using it.

ATTENTION:

If an external force is applied to the screwdriver during power-on period, an initial torque offset will be recorded in the memory.

AUTO POWER OFF

- The screwdriver will auto power off after about 5 minutes idle for power saving. Press C to power on the screwdriver again.

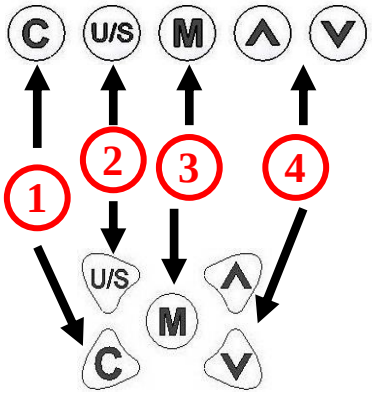
CAUTIONS:

During communication period (**Send** appears), the auto power off function is disabled.

RESETTING THE SCREWDRIVER

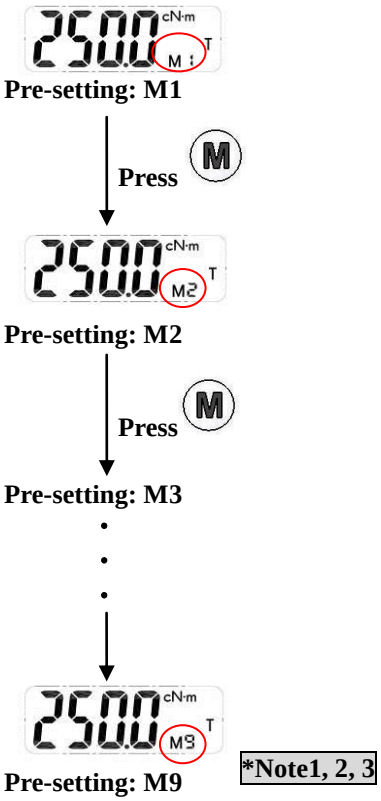
- If the screwdriver does not function normally, loosen the battery cap then tighten it to re-start.

SETUP



1. **Power On/Clear**
2. **Unit Selection/Setting**
3. **Pre-setting No.**
4. **Adjust Torque Value**

STEP 1: PRE-SETTING NO.



***Note1, 2, 3**

Note:

1. **If** Er0 **is appeared, that means this screwdriver has ever been applied more than 10% of torque of the spec.**
2. **The maximum capacity for "Pre-setting No." is 9 sets.**
3. **The "Pre-setting No." is cyclic.**

STEP 2: UNIT SELECTION

Pre-setting Unit: cN-m

Press U/S

Unit Selection: in-lb

Press U/S

Unit Selection: kg-cm

STEP 3: SET TARGET TORQUE

Pre-setting Target Torque

Press ^

Increase Torque Value

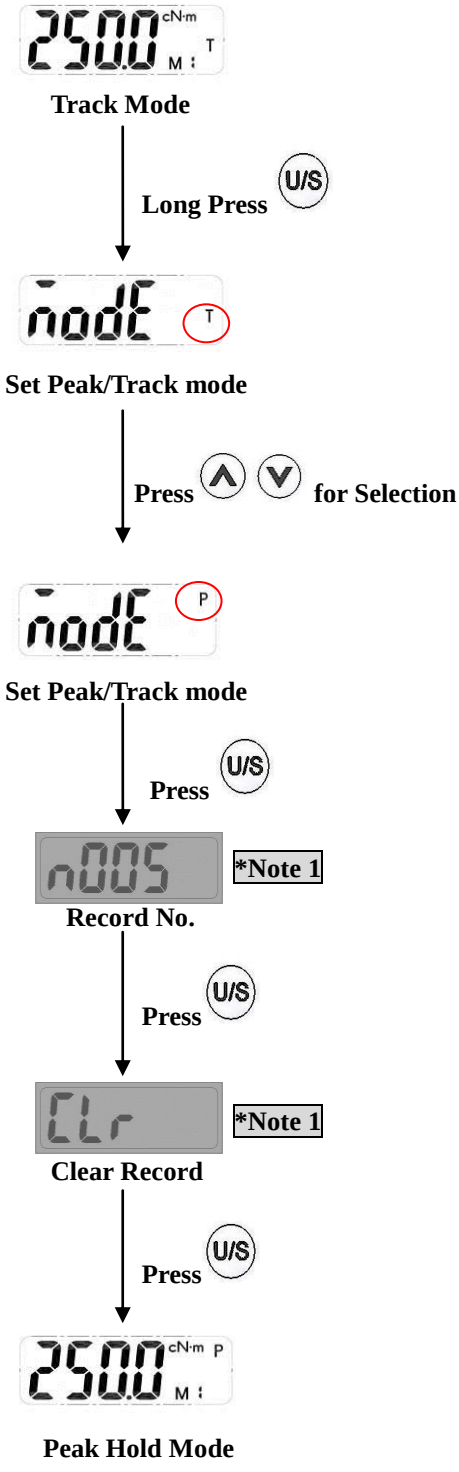
Press ^

Decrease Torque Value

Note:

1. **The "Unit Selection" is cyclic.**

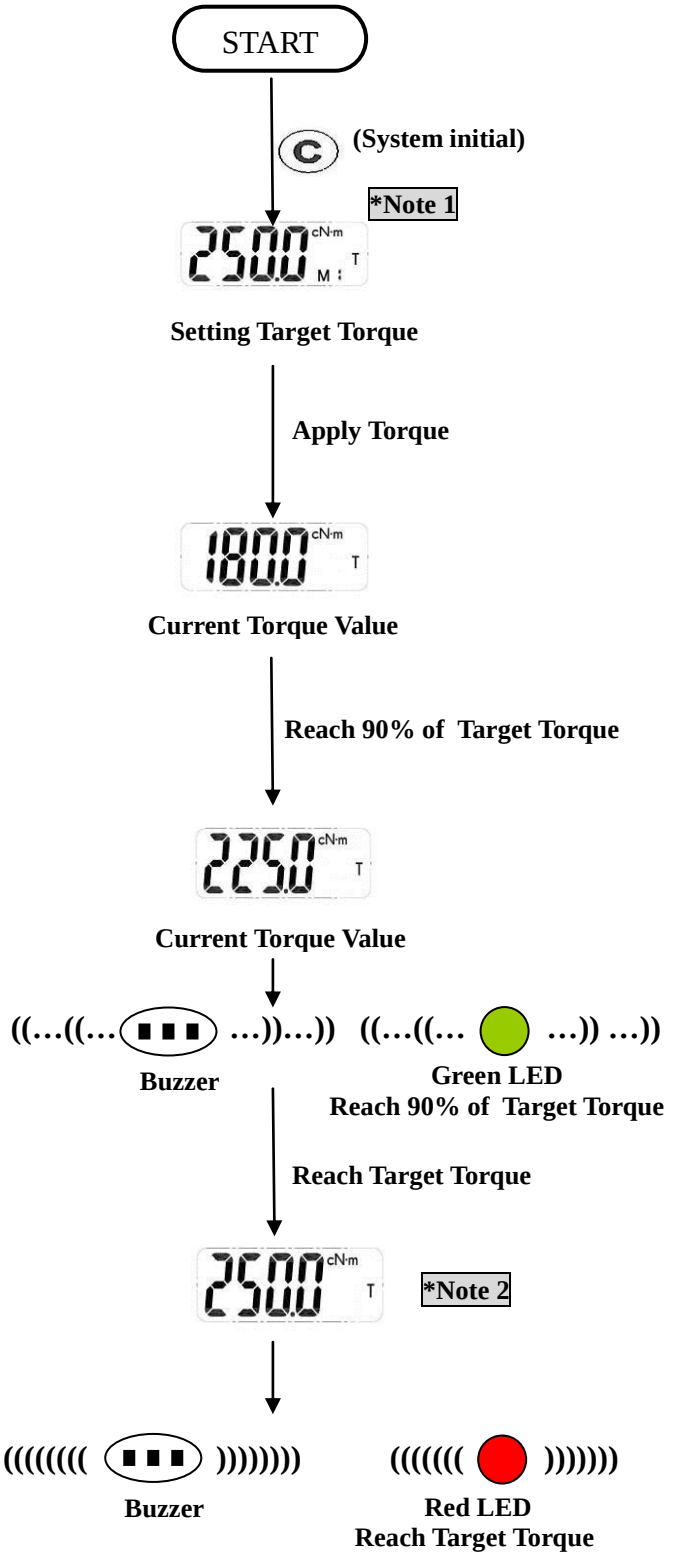
STEP 4: PEAK HOLD /TRACK MODE SELECTION



Note:

1. **Please skip this procedure and continue to the next step.**

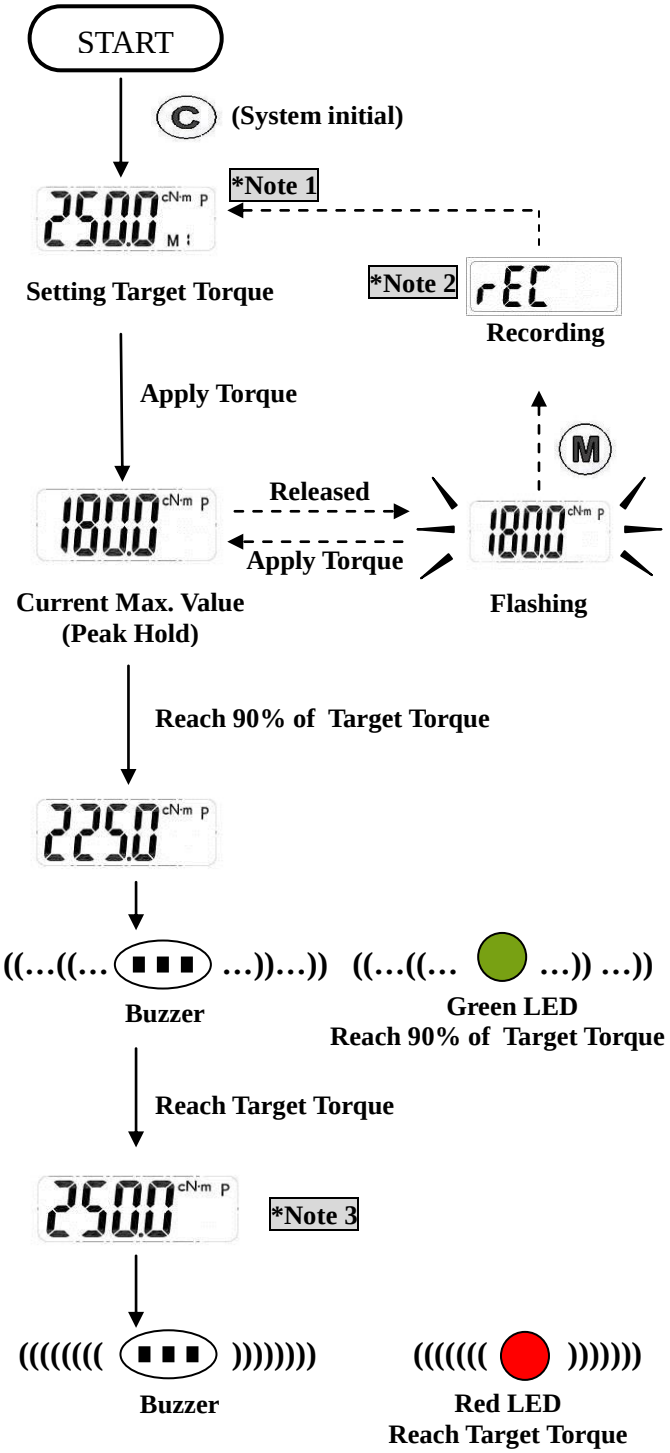
TRACK MODE OPERATION



Note:

1. **If**  **is appeared, that means this screwdriver has ever been applied more than 110% of torque of the spec.**
2. **When reaching the setting target torque, the green and red LED will be on at the same time.**

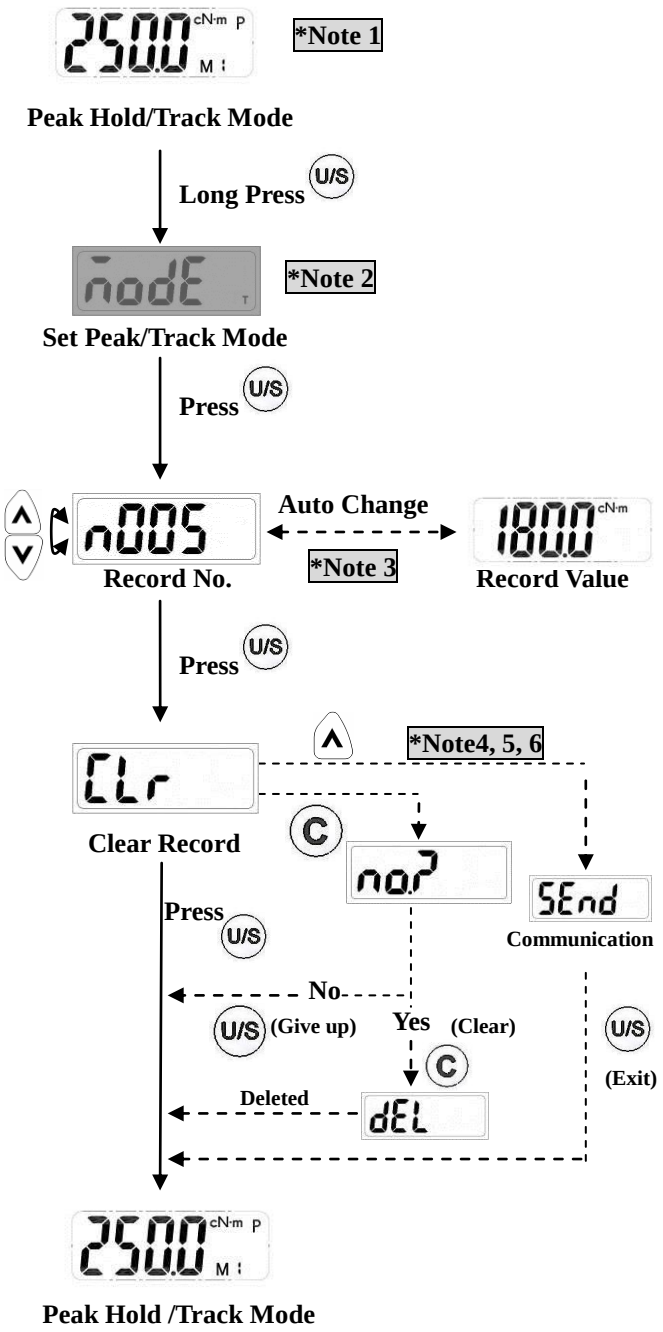
PEAK HOLD MODE OPERATION



Note:

1. If Er0 is appeared, that means this screwdriver has ever been applied more than 110% of torque of the spec
2. If Full is appeared, that means the screwdriver's memory is full and the next value record can not be written in. Please refer the "Peak Hold Mode Recorded Value Review" section to clear the momory records.
3. When reaching the setting target torque, the green and red LED will be on at the same time.

Peak Hold Mode Recorded Value Review



Note:

1. The "Peak Hold" mode recorded value review also can be operated form "Track" mode operation.
2. If you operate in the "Peak Hold" mode, the display will show nodE and please go to next step.
3. If the record is empty, it will show nonE.
4. This function is not supported on all type of models.
5. Communication mode is for uploading record data to PC.
6. Communication mode is also for calibration of screwdriver. Please contact your local dealer for information.

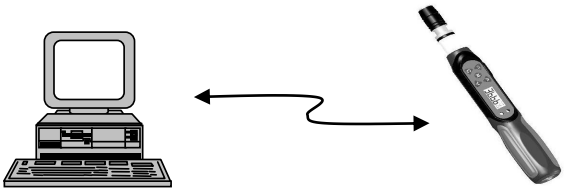
COMMUNICATION

Precaution:

1. **Communication function is only supported on some models. Check the model no. and its specification before using communication function.**
2. **Do not insert the plug of communication cable into torque screwdriver that does not support communication function.**

CONNECTING COMMUNICATION CABLE

- Turn off power and then connect the accessory cable between the COM port of PC and screwdriver.



UPLOADING RECORD DATA

- Make sure the connection between PC and screwdriver is normal.
- Change the screwdriver operation mode to "**Send**". (Please refer to "**Peak Hold Mode Recorded Value Review**" section)
- Use PC to start the uploader program.
- In uploader program, first select the correct COM port No.
- Next, select the file path to save the uploaded data.
- Finally, press "upload" button to transmit the screwdriver records to PC.
- The uploaded data is then shown on the column and saved in the *.csv file. Use Microsoft Excel to view *.csv file.

CAUTIONS:
Refer to the uploader program user guide for the detail operations.

Unit Selection: in-lb

TENANCE AND STORAGE

ATTENTION:

One-year periodic recalibration is necessary to maintain accuracy.

Please contact your local dealer for calibrations.

CAUTION:

1. **Over-torque (110% of Max. torque range) could cause breakage or lose accuracy.**
2. Do not shake violently or drop screwdriver.
3. Do not use this screwdriver as a hammer.
4. Do not leave this screwdriver in any place exposed to excessive heat, humidity, or direct sunlight.
5. Do not use this apparatus in water.(not waterproof)
6. If the screwdriver gets wet, wipe it with a dry towel as soon as possible. The salt in seawater can be especially damaging.
7. Do not use organic solvents, such as alcohol or paint thinner when cleaning the screwdriver.
8. Keep this screwdriver away from magnets.
9. Do not expose this screwdriver to dust or sand as this could cause serious damage.
10. Do not apply excessive force to the LCD panel.
11. Apply torque slowly and graspe the center of the handle. Do not apply load to the end of handle.

BATTERY MAINTENANCE

1. When the screwdriver is not used for an extended period of time, remove the battery.
2. Keep a spare battery on hand when going on a long trip or to cold areas.
3. Sweat, oil and water can prevent a battery's terminal from making electrical contact. To avoid this, wipe both terminals before loading a battery.
4. Dispose of batteries in a designated disposal area. Do not throw batteries into a fire.