



**AWI Series**

**DIGITAL TORQUE WRENCH**

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*PRODUCT INFORMATION MANUAL*

## THANKS FOR CHOOSING THIS PRODUCT

SUG Tools provide you with products at an affordable price, and we would like you to be fully satisfied with this product and our technical support. If any help or advice is needed, please kindly contact us.

## IMPORTANT SAFETY RULES

### **DANGER**

#### **Risk of Flying Particles**

**WARNING:** Over-torque may cause breakage. Force against flex stops on flex head may cause head breakage. An out of calibration torque wrench can cause part or tool breakage. Broken hand tools, sockets or accessories can cause injury. Excess force can cause crow foot or flare nut wrench slippage.

## BATTERY TOOL USE AND CARE

### **CAUTION**

Under abusive conditions, liquid may be ejected from the battery, avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

Do not expose this digital torque tool to dust or sand as this could cause serious damage. Do not expose the digital torque tool to extreme temperature, humidity direct sunlight or shock violently.

## SERVICE

### **CAUTION**

**Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel may result in a risk of injury.

**When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of shock or injury.

## SPECIFIC SAFETY RULES

### **CAUTION**

**Recommended operating temperature is -10-60°C (14-140°F).**

**Always replace damaged fasteners before applying torque.**

## POWER TOOL USE AND CARE

### CAUTION

**For hand use only.**

**Do not apply excessive torque or force to the tool housing.** The torque only applies on the driver head.

**Do not shake or shock.**

**Never use this digital torque tool to loosen fasteners.**

**This digital torque tool is for hand use only.**

**Always verify that the digital torque tool capacity matches or exceeds each application before proceeding.**

**Always verify the calibration of the digital torque tool if you know or suspect its capacity has been exceeded. To ensure accurate measurement periodic recalibration is necessary.**

**Never force the head of flex head drive against stops.**

**Keep this digital torque tool away from magnets.**

**Do not apply excessive force to the LCD panel.**

**Use the digital torque tool only for the intended use described in this manual. Do not use this digital torque tool as a hammer.**

**Do not use the digital torque tool if it is not working properly, or if it has suffered any damage.**

**Be sure all components, including wrenches, extensions, drivers and sockets are rated to match or exceed the torque being applied with tool.**

**Do not disassemble the digital torque tool.**

**Observe all equipment, system and manufacturer's warnings, cautions and procedures when using this digital torque tool.**

**Always using the correct size socket for the fastener being torqued.**

**Do not use damaged sockets, showing signs of wear or cracks.**

**Do not apply torque exceeding the rated capacity, regardless of whether the digital torque tool is On or Off. Avoid shock load. Over-torque(110% of Max. torque range) could cause breakage or lose accuracy.**

**Never operate digital torque tool when powered OFF. Always power digital torque tool ON prior to applying torque.**

**Do not press P/C button while torque is being applied.**

## FUNCTIONAL DESCRIPTION



### CONTROLS AND COMPONENTS:

- |                                  |                                 |                                        |
|----------------------------------|---------------------------------|----------------------------------------|
| 1. Reversible Ratchet            | 2. Quick Release Button         | 3. Forward and reverse selection lever |
| 4. 1/4" / 3/8" 1/2"/Square Drive | 5. Battery Cover                | 6. Handle                              |
| 7. LED Indicator                 | 8. Buzzer                       | 9. LCD Panel                           |
| 10. Button                       | 11. Power/Reset Button          | 12. Unit Selection Button              |
| 13. Mode Selection Button        | 14. Up Button                   | 15. Down Button                        |
| 16. Torque Value Display         | 17. Mode Display (*1)           | 18. Unit Display (*2)                  |
| 19. Battery Level Display        | 20. Memory Group Number Display | 21. Torque Direction Display           |

\*1 Modes: **T**: Trace Mode    **P**: Peak Mode

\*2 Unit: **N.m**: Newton Meter    **lbf.ft**: Foot Pound

**lbf.in**: Inch Pounds    **kgf.cm**: Kilogram Centimeter

## SPECIFICATIONS

| Model (without communication)    | □AWI-10                                         | □AWI-30                                          | □AWI-60                                           | □AWI-100                                         |
|----------------------------------|-------------------------------------------------|--------------------------------------------------|---------------------------------------------------|--------------------------------------------------|
| Minimum division value           | 0.01                                            |                                                  |                                                   | 0.1                                              |
| Maximum operating range<br>(N.m) | 10N.m/7.37ft.lb/8<br>8.50in.lb/101.97k<br>gf.cm | 30N.m/22.12ft.lb/<br>265.5in.lb/305.91<br>kgf.cm | 60N.m/44.25ft.l<br>b/531.04in.lb/61<br>1.82kgf.cm | 100N.m/73.7ft.lb/<br>885.0in.lb/1019.7<br>kgf.cm |
| Connector (inches)               | 1/4 inches                                      |                                                  | 3/8 inches                                        | 1/2 inches                                       |
| Setting range of buzzer (N.m)    | 0.3~10N.m                                       | 0.9~30N.m                                        | 1.8~60N.m                                         | 3~100N.m                                         |
| Length (mm)                      | 230mm                                           |                                                  | 240mm                                             | 285mm                                            |
| Accuracy*1                       | Clockwise: ±2% Counterclockwise: ±2.5%          |                                                  |                                                   |                                                  |
| Preset Value Memory Capacity     | 9                                               |                                                  |                                                   |                                                  |
| Operation Mode                   | Peak mode (P) / Real-time mode (T)              |                                                  |                                                   |                                                  |
| Unit                             | N.m, kgf.cm, lbf.ft, lbf.in                     |                                                  |                                                   |                                                  |
| Form of ratchet head             | Bidirectional ratchet head                      |                                                  |                                                   |                                                  |
| Number of ratchet teeth          | 72 teeth                                        |                                                  |                                                   |                                                  |
| Number of buttons                | 5 buttons                                       |                                                  |                                                   |                                                  |
| Battery                          | Two AAA batteries                               |                                                  |                                                   |                                                  |
| Operating temperature            | -10°C to 60°C                                   |                                                  |                                                   |                                                  |
| Storage temperature              | -20°C to 70°C                                   |                                                  |                                                   |                                                  |
| Test falling height              | one meter                                       |                                                  |                                                   |                                                  |
| Vibration test condition*2       | 10G                                             |                                                  |                                                   |                                                  |
| Service life test*3              | 10000 times                                     |                                                  |                                                   |                                                  |

\*1. The accuracy is available within the range of 20% to 100% of the maximum operating value. The torque accuracy is a normal value. The correction accuracy adopts an intermediate groove of five grooves on a grip as a correction point. In order to ensure the accuracy, it is suggested to correct the wrench once a year.

\*2. The vibration test includes the horizontal test and vertical test.

\*3. "One test time" refers to the process of applying the force from 0 N.m to the maximum operating value of the wrench and then returning to 0 N.m.

## ASSEMBLY

### BATTERY INSTALL AND REPLACEMENT



① ②  
③ ④



press the P/C button to power on



1. Open battery cover.
2. Insert battery cells, make sure the polarity is correct.
3. Close the battery cover.

If doing the replacement, then do it reversely.

## NOTE

1. Remove the batteries if stored for a long period of time.
2. Keep spare batteries on hand when going on a long trip or to cold areas.
3. Do not mix the type of batteries or combine used batteries with new ones.
4. Sweat, oil and water can prevent a batteries' terminal from making electrical contact. To avoid this, wipe both terminals before loading a battery.
5. Battery life depends on battery quality and the amount of buzzer is used.
6. Dispose of batteries in a designated disposal area. Do not throw batteries into a fire.

## OPERATION



### WARNING

To reduce the risk of injury, wear safety goggles or glasses with side shields. Always remove battery pack before changing accessories or making adjustments.

## PRODUCT FUNCTIONS



| Name of Function Key | Function Description                                 |
|----------------------|------------------------------------------------------|
| P/C key              | Power and Clear                                      |
| U/S key              | Unit Selection                                       |
| M key                | Mode Selection<br>Press and Hold to Memory Selection |
| ▲ (UP) key           | Number Increasing                                    |
| ▼ (DOWN) key         | Number Decreasing                                    |

## POWER ON

Press P/C key to turn the digital torque tool on.

After the display showed the Max measuring value for 3 second, the display will show the last Data before it was switched off.

## POWER OFF

Press P/C key and hold for 2 seconds to switch off .

## RESET

Press P/C key to reset.

## HOW TO SELECT UNIT

Press U/S key to select N-m, Kg-cm, lb-in, and lb-ft; the preset unit is N-m.

**Torque Unit Conversion Table**

|                 | <b>lbf.in</b> | <b>lbf.ft</b> | <b>N.m</b> | <b>Kgf.cm</b> |
|-----------------|---------------|---------------|------------|---------------|
| <b>1 lbf.in</b> | 1             | 0.083         | 0.113      | 1.152         |
| <b>1 lbf.ft</b> | 12            | 1             | 1.356      | 13.83         |
| <b>1 N.m</b>    | 8.851         | 0.737         | 1          | 10.2          |
| <b>1 Kgf.cm</b> | 0.868         | 0.072         | 0.098      | 1             |

## PRESET MEMORY GROUP FUNCTION

All preset memory data sets are preset as 10 values. To set a memory value, press and hold the M KEY, after 2 sec, then the memory group number is flashing, enter memory group number selection mode, use  $\wedge$

(up) or  $\vee$  (down) to select the memory data set (up and down keys can be held down for continuous increasing or decreasing. Press the M Key after selected, will leave the select mode to stop flashing. You can press  $\wedge$ (up) or  $\vee$  (down) KEY to change the selected preset value.

## HOW TO SET TARGET VALUE

In (T)trace mode or (P)peak mode, press and hold  $\wedge$  (up) or  $\vee$  (down) to increase or decrease the target value.

## HOW TO SET TRACE MODE (T), PEAK MODE (P)

Press M key to change trace mode (T) or peak mode (P) .

## TRACE MODE (T)



After setting a preset value (assuming the value is 5N.m), the force applied by the wrench will gradually increase from Minimum measure value. When force is applied, the displayed value will change as the user applies different amounts of force; the reading will increase as force increased, and decrease as force decreased. The reading will back to preset 5 N.m when the user releases his grip and lets up.

### **PEAK MODE (P)**

After setting a value (assuming the value is 5N.m), the force applied by the wrench will gradually increase from Minimum measure value. When force is applied, the displayed value will keeps showing the max torque value when the user applies different amounts of force; after the user release the grip and let up, the max value will keep on flashing, it will back to the original setting data when press the P/C key, if you apply force again and the measured torque value will rise from Minimum measure value again.

### **^(UP) / ∇(DOWN) SELECTION**

Pressing the ^ (up) key once will cause the value on the far right to increase by one; pressing the key continuously will cause the value to increase continuously. Pressing the ∇ (down) key once will cause the value on the far right to decrease by one, pressing the key continuously will cause the value to decrease continuously.

### **LED & BUZZER**

There will be a beep each time a key is pressed.

In the tracking mode, for example: when the preset torque value is 20N.m, the reading will begin to increase from Minimum measure value as soon as the user begins to apply force. When it approaches the 80% of preset value(16N.m), the red LED light will begin to flash and the buzzer will be on. As the applied torque approaches the preset value, the red light will flash faster, and the buzzer will buzz faster. When the applied torque reaches 100% of the preset value(20N.m), the red LED light and buzzer will be on continuously. The LED and buzzer sound will decrease gradually as force is released.

The peak mode works the same as the tracking mode.

### **RESET MEMORY FUNCTION**

Press and hold P/C key and ∇ key together until the screen displays "0 to 00000", and flashes for 3 times, then all values will be back to factory preset datas.

### **BACKLIGHT SWITCH**

Press the P/C key + ^ (up) key to turn the backlight on or off; the backlight is preset to be on.

### **RESET**

In order to get accurate data, press P/C key each time to reset the data before using the device.

### POWER SAVING MODE

The device will be entered into power-saving mode after 2 minutes without any operation, you can press P/C key to wake it up.

### OVERLOAD WARNING

Switch on or reset when screen continued to appear 120%, it means the device have been forced exceeds the maximum standard torque value 120%, may result in the products' damage or accuracy error.

Under normal usage:

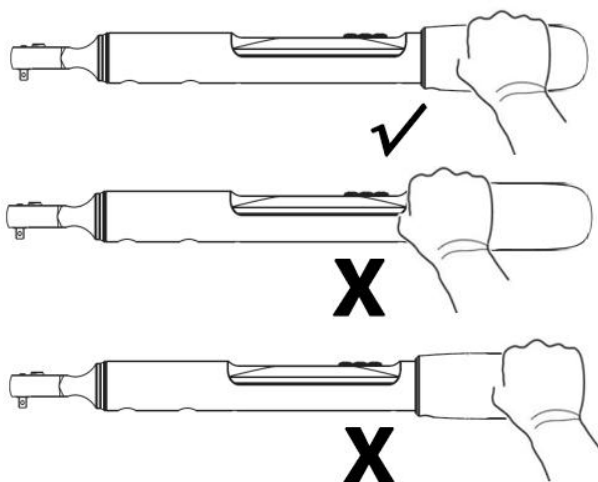


Overload(120%):



### USAGE

Illustration of using wrench handle:



P.S = Before completion of the booting process (see **POWER ON**), do not force in the torque wrench.

## WARNING NOTE FOR USING BATTERIES

1. Please take out the batteries, if the product is not used a long period of time.
2. Please prepare the more backup batteries, when the product is used in other places without electric power.
3. Do not mix old and new batteries.
4. Do not use the soiled batteries with perspiration and greasiness.
5. Do not throw the batteries at fire, and the batteries have to be recovered.
6. The standard or rechargeable batteries can be used in our products.
7. If the LCD screen cannot display, please check whether the batteries are without electricity, or replace them.

## MAINTENANCE

### **WARNING**

In order to maintain accuracy of the tools, we recommend that you conduct the calibration once a year.

### **WARNING**

Remove batteries before cleaning.

## CLEANING AND THINGS TO REMEMBER

1. Use a soft, dry, clean-cloth clean the wrench and LCD panel.
2. Clean torque wrench by wiping. Do not immerse.
3. Store torque wrench in protective case at its lowest torque setting. Do not force handle below lowest setting.
4. If the wrench gets wet, wipe it with a dry towel as soon as possible. The salt in seawater can be especially damaging.
5. Do not use organic solvents, such as alcohol or paint thinner when cleaning the wrench.
6. Do not place the product nearby any magnetic products.
7. Do not exert heavy force or pressure on the LCD screen.
8. Do not use the products as striking tools.
9. Do not hit the products by using hammer or other tools.
10. Exceeding the largest standard torque value may result in the products' damage or accuracy error(110%).
11. Do not use near or place in water.
12. Do not place the product in the high temperature and damp environment or do not expose the product to sunlight.
13. Do not place the product in the full dust or sand environment.
14. Do not violently shake or drop the product.
15. Please take out the batteries if the product is not used a long period of time.
16. Do not throw the batteries into fire, and the batteries have to be recycled.
17. Please read carefully the operating manual, and then follow the guides of the manual, before using the digital torque wrench.
18. Off state is prohibited to use.

19. Do not use the additional tools to extend the length of the handle, such as: iron or plastic pipe.
20. Do not touch any button when torque is exerted.
21. The digital torque wrench cannot be applied to the conductive tools.

## **LUBRICATE**

The wrench's internal mechanism is permanently lubricated during assembly. **Do not attempt to lubricate the internal mechanism.**

## **ACCESSORIES**

**Use only accessories that are recommended by the manufacturer for your model.**

Accessories that may be suitable for one tool may become hazardous when used on another tool.

Recommended accessories for use with your tool are available at extra cost from your local service center.

**IMPORTANT:** To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustments should be performed by certified service centers or other qualified service organizations, always using identical replacement parts.

## **PROTECTING THE ENVIRONMENT**

Before disposing of damaged, check with your state Environmental Protection Agency to find out about special restrictions on the disposal of tool or return them to a certified service center for recycling.