

## CONTINUATION

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Ver:2.01 Con:20150907

## SDC SERIES USER'S MANUAL

SDC Series 扭矩扳手检测仪  
User Manual **DIGITAL TORQUE WRENCH TESTER**

For

**SDC-2**

**SDC-5**

**SDC-10**

**SDC-20**

**SDC-50**

**SDC-100**



温州山度仪器有限公司  
WENZHOU SUNDOO INSTRUMENTS CO.,LTD



Thanks for your patronage to purchase SDC Series Digital Torque Wrench Tester.

This instrument is an intelligent multi-functional test equipment, which is designed to test different kinds of torque wrench. Before using this instrument, please read the manual carefully so that you can make full use of this instrument and get accurate load value.

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Packing List

Item	Name	Quantity
1	Digital Torque Wrench Tester	1
2	Power Cable	1
3	Straight-through RS-232 Cable with Two-sided holes	1
4	1/4' Square Connector	1
5	3/8' Square Connector	1
6	1/2' Square Connector	1
7	Hexagonal Transmission Shaft	1
8	CD	1
9	Calibration Manual	1
10	Factory Inspection Report	1
11	Qualification Card	1

Technical Parameter

Model	SDC-100	SDC-50	SDC-20	SDC-10	SDC-5	SDC-2	Within ±0.5%	10%~100% FS	Manual	110V~220V 50~60HZ 100W	L620×W370×H180 mm	
Capacity	100 N.m	50 N.m	20 N.m	10 N.m	5000 N.mm	2000 N.mm						
Resolution	0.01 N.m	0.005 N.m	0.002 N.m	0.001 N.m	0.5 N.mm	0.2 N.mm						
Accuracy												
Measuring Range												
Loading Mode												
Power												
Dimensions												

## Function

SDC Series Digital Torque Wrench Tester is specialized in testing various kinds of torque wrench. The torque displays in digital, so as to be accurate and intuitive. The mortises are simple and can be easy to equip clamps.

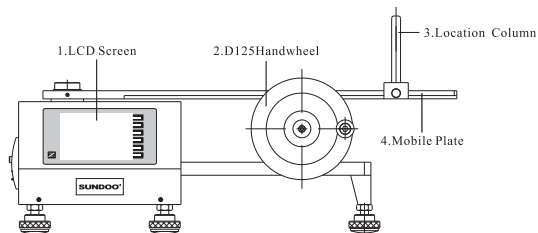
## Operating Environment

1. Operating temperature: 0°C~40°C.
2. Operating humidity: 35%RH~65%RH.
3. No vibrancy and no cauterly around the test environment.

## Characteristic

- 320×240 pixel LCD.
- Peak-holding function.
- Automatic discharge function of the peak: Peak-holding time(1-99 seconds) can be set freely.
- Automatic power off function: Shutdown time (1-99 minutes) is free to set.
- Compare function: Free to set upper and lower limit deviation value; the buzzer can alarm automatically.
- Conversion of three units: Nm (N.mm), kgf.cm, lbf.in can convert automatically.
- Built-in micro printer: You can print the test curve or 10 groups of memory value report.
- Serial port (RS-232C) output: Connecting the computer can achieve the curve test function; built-in micro printer can print 10 groups of stored test data or current test curve.

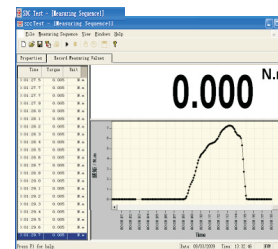
## Parts Appellation and Function



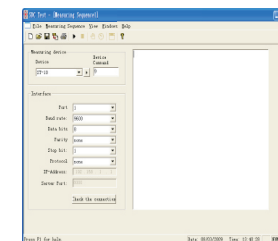
Picture 1

## Icon instruction

- "📄": The collection data is imported into EXCEL file;
- "▶": Open serial port to start test;
- "■": Close serial port to stop test;
- "👂": Collect current value manually;
- "🔄": Collect the data continuously and regularly.



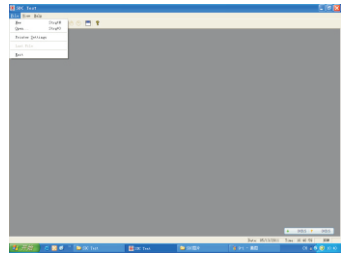
Picture 13



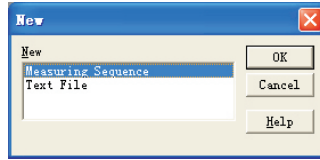
Picture 14

## Maintenance

1. Do not use the instrument with overload. Otherwise it may be damaged and even cause danger.
2. Do not strike the LCD screen or put an object on LCD screen.
3. Do not press the buttons with nails and other pointed tools.
4. Do not use the instrument near water, oil and other liquids. Please keep it in a shady, dry and stable place.
5. Do not open the rear cover or adjust any electronic components.
6. Use 220V ± 10V AC power, otherwise it would cause circuit failure and even fire.
7. Do not touch the power plug with wet hands, otherwise it may cause electric shock.
8. Please clean the instrument with soft cloth. First put dry cloth in the water with detergent and then dry the cloth to clean the instrument. Do not use volatile chemical liquids, such as volatile oil, thinner, alcohol, etc.
9. Handle carefully while carrying and using the instrument.
10. Do not disassemble, repair or modify the instrument by yourself. It may cause forever malfunction for the instrument.



Picture 9

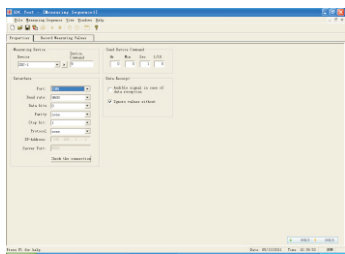


Picture 10

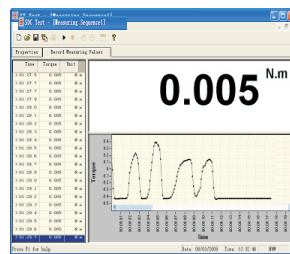
F. After choosing "Measuring Sequence", please choose corresponding model and serial port. Choose Baud rate as 9600, choose Data bits as 8, choose Stop bit as 1, and choose Parity as none. After that, set the time of capturing the signal of force value in Send Device Command. 1/10 means 0.1 second(See Picture 11: When Hr is 0, Min is 0, Sec is 0, 1/10 is 1, then the capturing time is 0.1 second).

G. After setting the parameters, please click "Record Measuring values" option, and switch to curve display interface.

H. After clicking start button "▶", then click "TIMER" (🕒) to collect test data curve (See Picture 12).



Picture 11

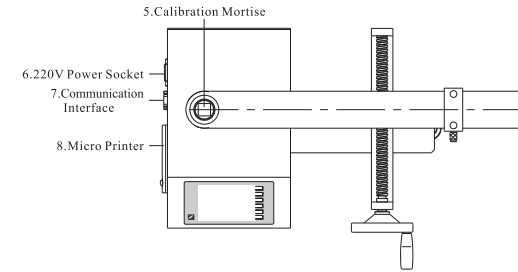


Picture 12

I. After finishing test, please click stop button "■" to stop testing (See Picture 13).

J. Click save button to save the data.

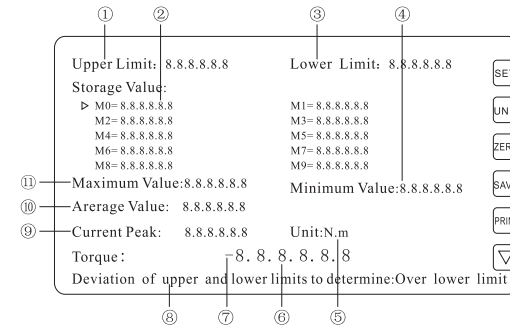
K. If you choose the Text File, it means that you can import the stored data of the instrument. Please choose the matched model and corresponding serial port, then click the start button "▶" to open the serial port and press "PRINT" on the instrument to import the stored data to the computer (See Picture 14).



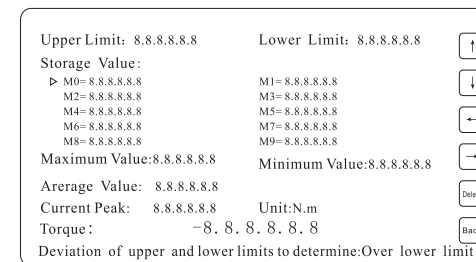
Picture 2

## 1.LCD Screen

### 1) Test Interface



Picture 3



Picture 4

- ①The reading of upper limit value.
- ②The reading of lower limit value.
- ③Store test value: 10 locations from M0 to M9, each location can store a test value.

▷ :means that this place is the current storage location.

- ④ Maximum storage value.
- ⑤ Minimum storage value.
- ⑥ The average of stored value.
- ⑦ The peak during test.
- ⑧ Torque unit in the test: N.m(N.mm), kgf.cm, lbf.in.
- ⑨ The reading of torque value.
- ⑩ Torque direction: It is blank when in clockwise direction; it is " — " when in counter clockwise direction.
- ⑪ Judge the deviation of upper and lower limits:

When the test value is larger than upper limit value, it shows exceeding upper limit.

When the test value is between the upper and lower limit value, it shows eligible.

When the test value is lower than the lower limit value, it shows exceeding lower limit.



ON/OFF Button



- A. Set automatic alarm values of upper and lower limits.
- B. Set peak-holding automatic discharge time (free setting from 1 to 99 seconds, 0 means not discharging).
- C. Set automatic shutdown time (free setting from 1 to 99 minutes, 0 means not shutdown).
- D. Set serial communication mode.
- E. Set storage mode.



- A. Select the current storage location when in test interface.
- B. Select the data that need to be modified when setting.



- A. Select the current storage location when in test interface.
- B. Select the data that need to be modified when setting.



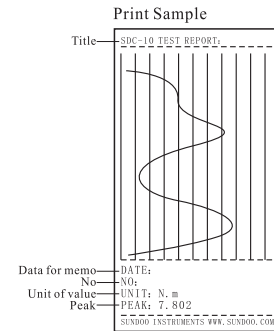
- A. Select the current storage location when in test interface.
- B. Select the data that need to be modified when setting.



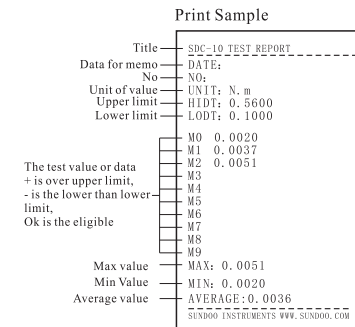
- A. Select the current storage location when in test interface.
- B. Select the data that need to be modified when setting.



Used to modify the parameters.



Picture 7



Picture 8

3. When setting the communication mode as "PC", connecting the computer can view test curve by software or import 10 groups of stored data. The required configuration and specific operation are as follow:

- (1) Hardware environment
  - A. CPU: Celeron 1G or above.
  - B. Memory: 256MB or above.
  - C. Hard disk available capacity: 300MB or above.
  - D. Drive: CD-ROM or DVD-ROM.
- (2) Software environment
  - Operating system: Windows XP (32bit).
- (3) Specific operation

- A. Connect the communication interface of instrument with computer via RS-232C cable.
- B. Turn on the power and make it in working state, then set the serial port communication mode as "PC" (See the setting method on Page 7).
- C. Insert the accessory CD into computer and open the following route: CD-ROM/English/Measure Software/SDC Test/SDC Test.exe.
- D. Click "New" in the "File" option (See Picture 9).
- E. There are two modes to choose in new dialog box: Measuring Sequence and Text File (See Picture 10).



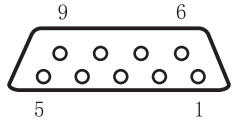
- G. After setting, press the "EXIT" button to save settings and back to testing interface.
- Put the corresponding calibration mortise into the notch of sensor connector.
  - Move the location column out of the range of dial torque wrench.
  - Put the dial torque wrench flat on the mobile plate, press the "ZERO" key to clear.
  - Move the hand wheel to test the torque values of dial torque wrench in different ranges and press "SAVE" button to store the torque value (When the hand wheel turns left, it shows "—" symbol in front of the torque value and peak value). After the pointer of dial torque wrench pointing at 100N.m, it returns to zero, and then the screen shows "0", and the dial pointer also points at "0".
  - After finishing the test, press "ON/OFF" button and pull out the power plug.

NOTE: This instrument is to test the torsion torque produced by the elastic deformation. Do not exert on the directions of compression and tension produced by sensors.

### Serial Port Output and Print

This instrument is RS-232C level output, which can be connected with micro printer, computer and other external devices. The matching external devices must support RS-232C electrical level.

Illustration of RS-232 Port



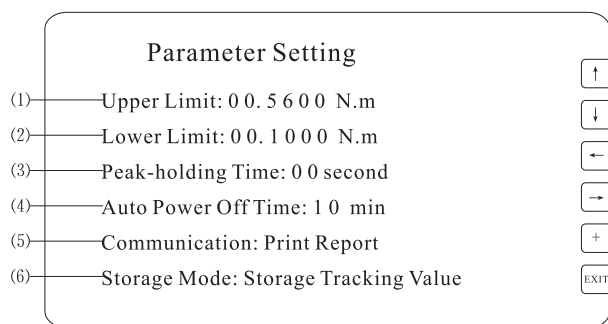
Needle	Signal	Illustration
2	TxD	Output signal of sem
3	RxD	Incept signal sem
5	GND	Earth

Picture 6

- When setting the serial port communication mode as "Print Curve", it means printing single test curve. The screen shows "Print Curve" when pressing "PRINT" button. It can print the test curve when testing. The print sample (See Picture 7) is as follow:
- When setting the communication mode as "Print Report", "Print Report" will flicker on LCD screen when pressing "PRINT" button, and 10 groups of stored data and analysis report can be printed (See Picture 8).

- EXIT** Save the set value and exit the setup interface to the test interface.
- UNIT** Torque Unit Conversion
- ZERO** Clean the torque values and peak value to ZERO.
- SAVE** In the "Storage Tracking Value" mode, pressing this button can store the current torque value into the corresponding storage location of "▷" symbol and move the "▷" symbol to the next storage location. In the "Storage Peak Value" mode, pressing this button can store the current peak value into the corresponding storage location of "▷" symbol and move the "▷" symbol to the next storage location.
- PRINT** Print the current data (See the details in "Serial Port Output and Print").
- DELETE** Pressing this button can delete the test value of current storage location; pressing this button all the time can delete the test values of all the stored locations.
- ▽** Shift Key for Second Function  
 "SET" key shifts into the "↑" key  
 "UNIT" key shifts into the "↓" key  
 "ZERO" key shifts into the "←" key  
 "SAVE" key shifts into the "→" key  
 "PRINT" key shifts into the "DELETE" key  
 "▽" key shifts into the "BACK" key
- BACK** The Key Back to First Function  
 "↑" key shifts into the "SET" key  
 "↓" key shifts into the "UNIT" key  
 "←" key shifts into the "ZERO" key  
 "→" key shifts into the "SAVE" key  
 "DELETE" key shifts into the "PRINT" key  
 "BACK" key shifts into the "▽" key

## 2) Setting Interface



Picture 5

- ① Upper limit value
- ② Lower limit value
- ③ Peak-holding time (free setting from 1 to 99 seconds, 0 means not automatic discharge)
- ④ Automatic shutdown time (free setting from 1 to 99 minutes, 0 means not shutdown)
- ⑤ Communication mode:
  - "PC": Connecting to computer can view the test curve by software or export the test data;
  - "Print Report": Print 10 groups of stored data by exporting to the built-in micro printer;
  - "Print Curve": Print the current test curve by exporting to the built-in micro printer.
- ⑥ Storage mode:
  - "Storage Tracking Value": Pressing the "SAVE" button can store the current tracking value;
  - "Storage Peak Value": Pressing the "SAVE" button can store the current peak value.

NOTE: You can move the cursor to the corresponding item by "↑ ↓" button, move the cursor to the location that needs to modify by "→ ←" button and then modify the parameters by "BACK" button. After that, pressing " + " button to save the setting and back to the test interface.

2. D125 Handwheel
3. Location Column
4. Mobile Plate
5. Calibration Mortise
6. Communication Interface  
Used to connect computers and other external devices
7. Micro Printer  
Print the stored test data
8. 220V Power Socket

## Operation Instruction

Instruction: Take SDC-100 as an example.

1. Turn on the power switch.
2. Pressing the Unit button to choose the needed unit (N.m, kgf.cm, lbf.in).
3. Setting the upper and lower limit values, auto power off time, peak automatic discharge time, communication mode and storage mode according to your test requires.
  - A. Pressing "SET" button can make the cursor stop at the upper limit location, and pressing "→ ←" button can make the cursor stop at corresponding location and change the parameters by " + " button.
  - B. Pressing " ↓ " can make the cursor stop at the lower limit location, and pressing "→ ←" button can make the cursor stop at corresponding location and change the parameters by " + " button.
  - C. Pressing " ↓ " can make the cursor stop at auto power off time, and pressing "→ ←" button can make the cursor stop at corresponding location and change the parameters by " + " button.
  - D. Pressing " ↓ " can make the cursor stop at peak automatic discharge time, and pressing "→ ←" button can make the cursor stop at corresponding location and change the parameters by " + " button.
  - E. Pressing " ↓ " can make the cursor stop at the communication mode, and pressing " + " button can change the current state. "PC": Connecting to computer can view the test curve by software or export the test data; "Print Report": Print 10 groups of stored data by exporting to the built-in micro printer; "Print Curve": Print the current test curve by exporting to the built-in micro printer.
  - F. Pressing " ↓ " button can make the cursor stop at the storage mode, and pressing " + " can change the current state.