364-23-188-1

Nidec
All for dreams

accessorial software

Digitorq _TNX

Instruction Manual

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NIDEC DRIVE TECHNOLOGY CORPORATION

Foreword

Thanks for use the tied accessorial software [Digitorq_TNX] of High function digital torque tester [TNX series] of our company. The instructor contained operation of the tied accessorial software [Digitorq_TNX] of high function Digital torque tester [TNX] series.

1.Overview

The software is used to read the date of torque tested by the High Function Digital torque test and save the data in graph computing software. Join the computer to TNX with USB serial and operate "mainframe" operation, or make through "USB memory" dan read the torque data that tested.

This software has the following functions in "Main Operation" and "USB Memory Operation" respectively.

[Main Operation]

・Read open memory date (1st, 2nd, 3rd), close memory date.

・Read data continuously.

・Read and set upper/lower limit value.

・Set the time of inner box of TNX.

[USB Memory Operation]

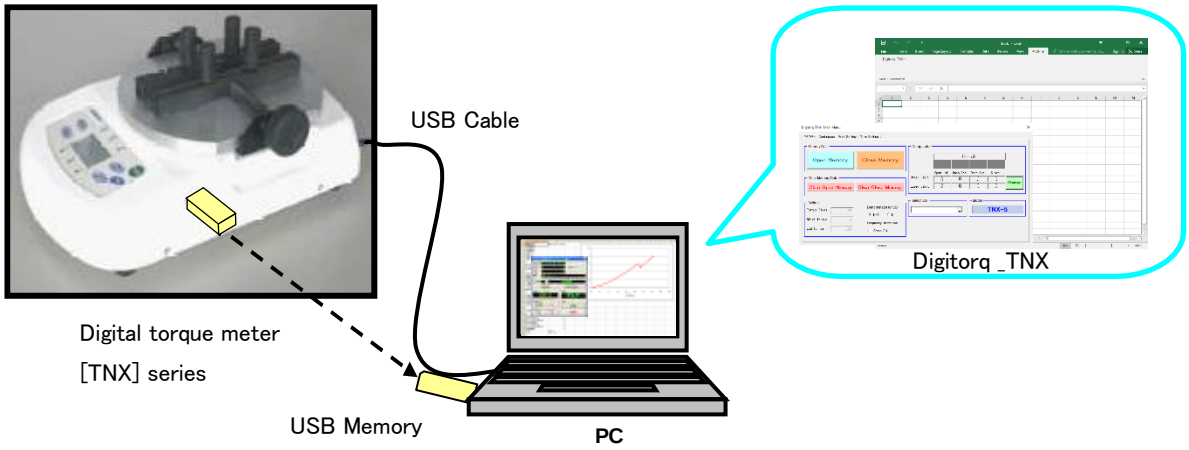
・Read data memoried USB memory.

・Set the parameter of setup.

・Make frequency distribution graph ouoroling the date when reading memory data.

・Make time torque graph when reading continuous data.

2.Configuration



Work environment

- Microsoft Windows® 10 ※ 64Bit (English environment)
- Microsoft Excel® 2016 ※ 32Bit/64Bit
- Microsoft Excel® 2019 ※ 32Bit/64Bit

- Insure turnning on the TNX before join the USB to the computer.
- Turn off the power of TNX change the upper/lower limit value and or change the test mode when operating Digitorq _TNX. It will lead to work singularly. These kinds of operation are forbidden when connecting to the computer.
- Uninstall the device which are being visited (USB memory, floppy) will lead to singular work these kinds of operation are forbidden when operating the USB memory.
- Turn off the TNX while using the mainframe of Digitorq _TNX change the upper limit/lower limit value on the side of mainframe, or change the memory data test mode.

※Microsoft, Windows and Excel are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

NOTES

- NIDEC DRIVE TECHNOLOGY holds the copyright and all rights about the book of "Digitorq_TNX".
- In reference to other caution, please confirm the term of service when you install this software.

3.Setup Procedure

Installation drive file for communication and Digitorq_TNX before operate Digitorq_TNX.

3.1.Decompression of the downloaded file

Decompressing the file "Digitorq_TXN_download_v***. exe" downloaded from our company's homepage.
These are files and folders compressed at the destination.

* For express the information of edition.

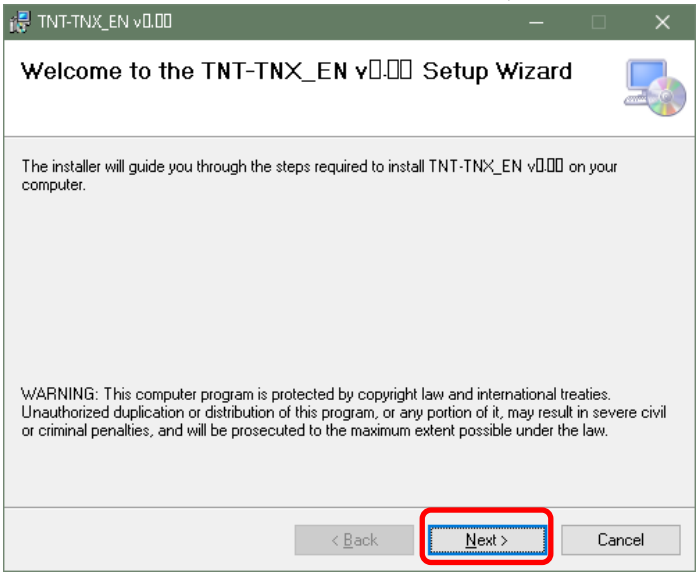
- Digitorq_TNX_EN_v***.msi
- Digitorq_TNX Instruction Manual(99191*).pdf

3.2.Digitorq_TNX Installation Procedure

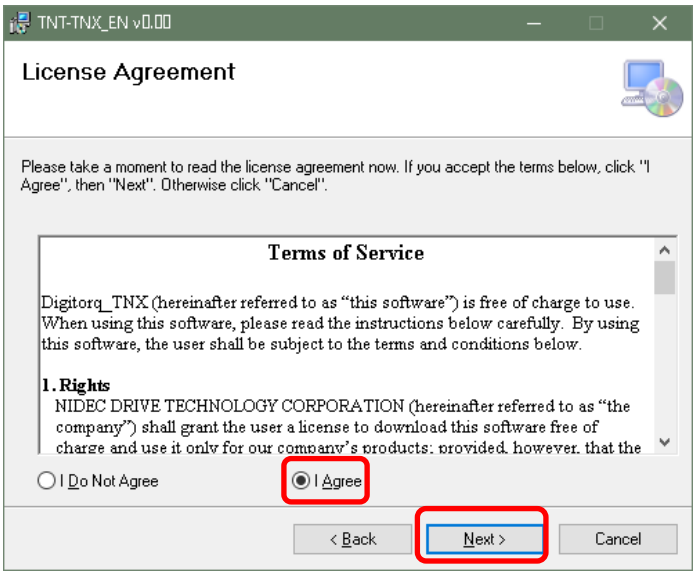
Double click "Digitorq_TNX_v***. msi" the start to setup Digitorq_TNX.

* For express the information of edition.

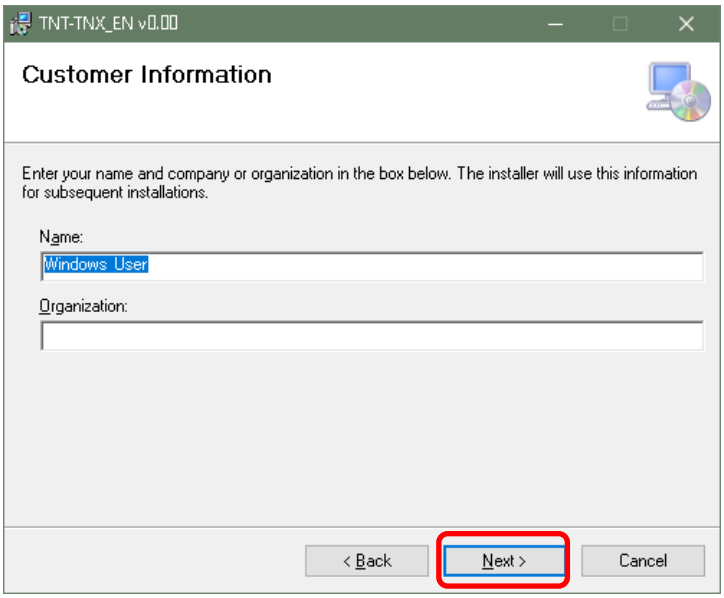
Digitorq_TNX
_EN_v**.msi



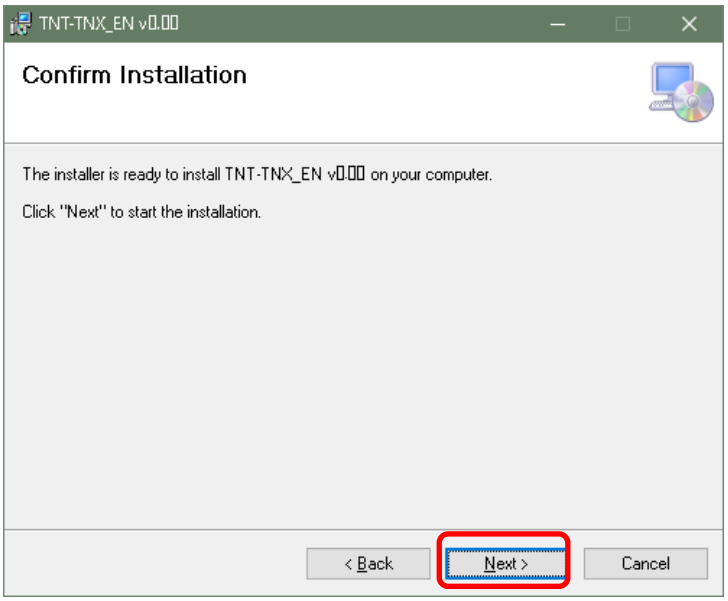
Click "Next (N)"



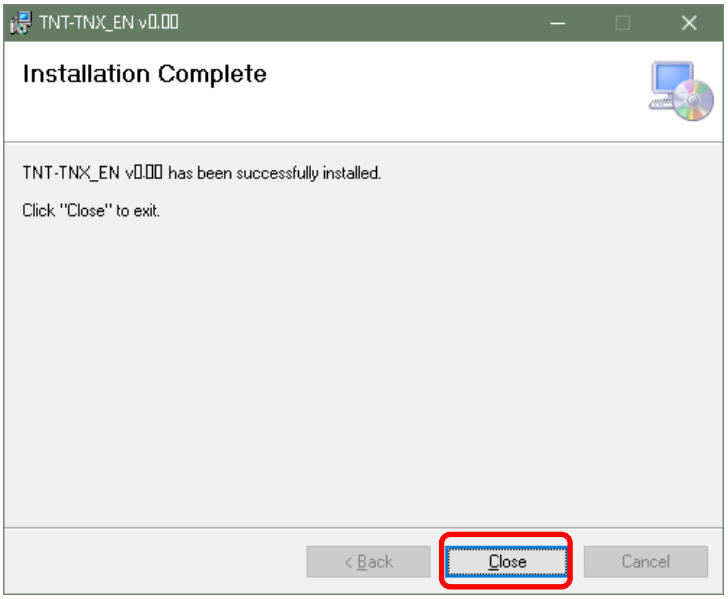
Please confirm the license agreement.
If you agree click "I Agree" button, click "NEXT" button.



Input name and click "Next" button.



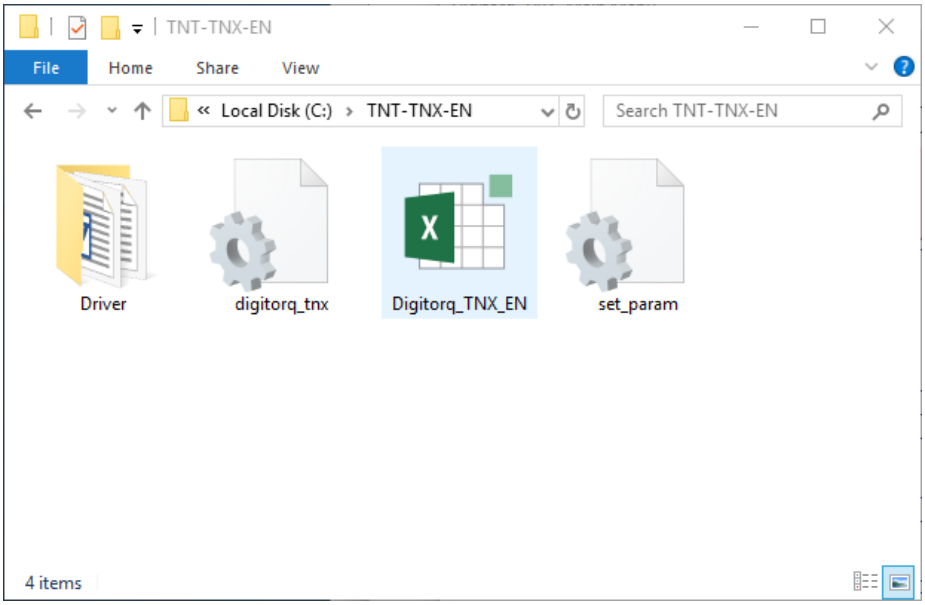
Confirm the content indicated and click "Next" to continue with the installation.



If installation is finished, click "Close" to exit installation

Following files will be built in Disc C (C:\) when the installation of Digitorq _TNX is finished.

```
TNT-TNX-EN
+---  Driver                  : files of USB driver ※
+---  Digitorq_TNX_EN.xla     : accessorial software
+---  digitorq_tnx.ini        : set file 1*of Digitorq _TNX
+---  set_param.ini           : set file 2*of Digitorq _TNX
```

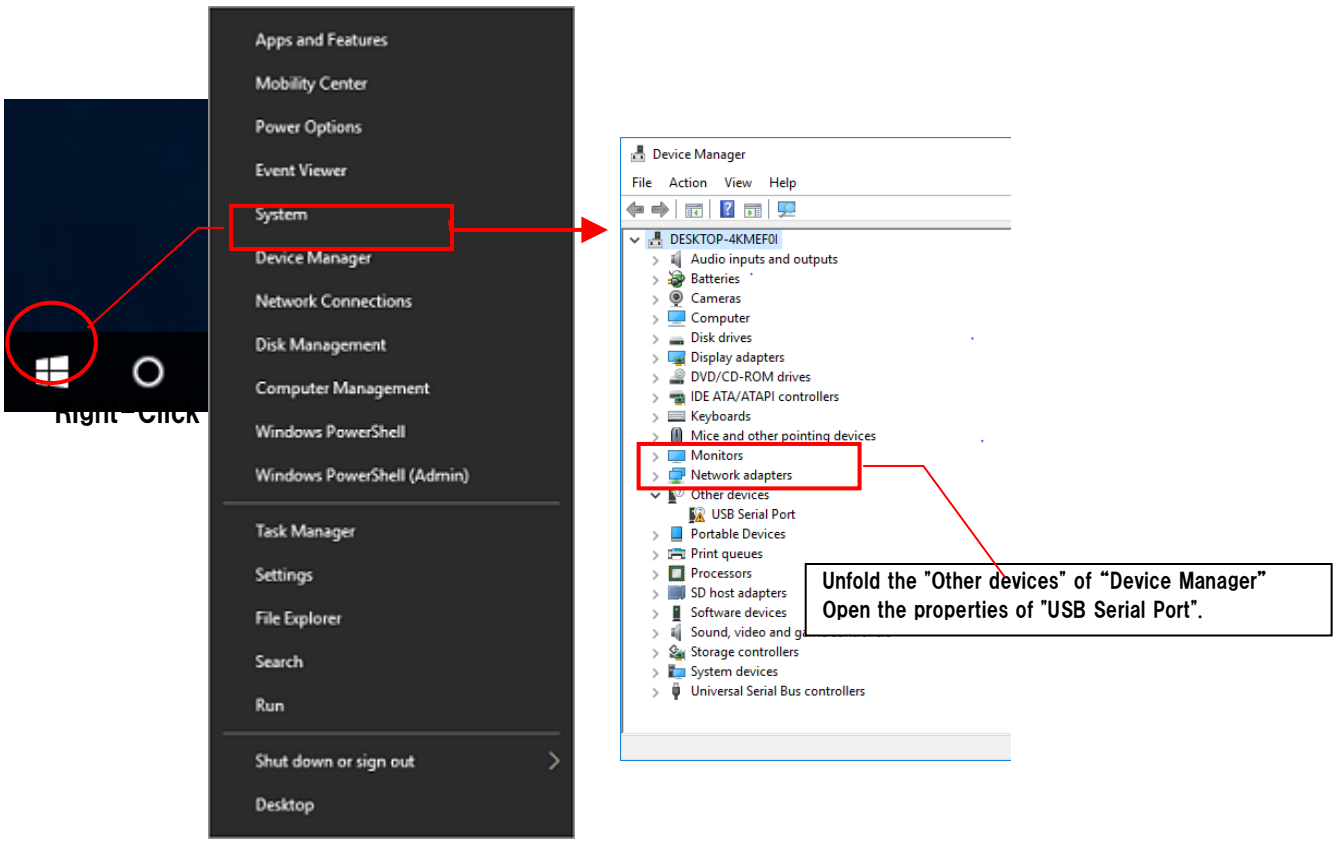


※ The software may work singularly. Therefore, don't more and change "Driver" folder, "Digitoruq_tnx.ini" file, and "Set-param.ini" file.

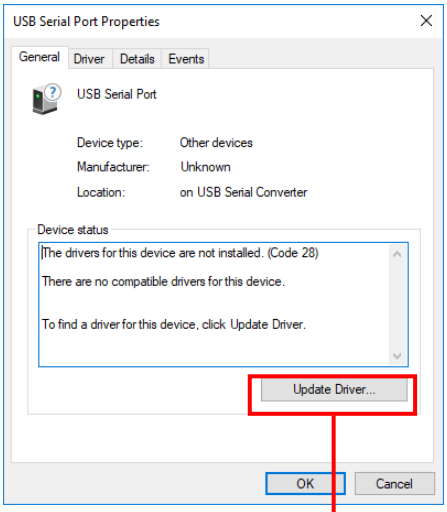
3.3.USB driver Installation

After powered on TNX, insert the USB cable into the USB port of PC.
How to install the driver depends on your PC environment.
Please install according to PC environment.

After powered on TNX insert the USB cable into the USB port of PC and display "Device Manager".

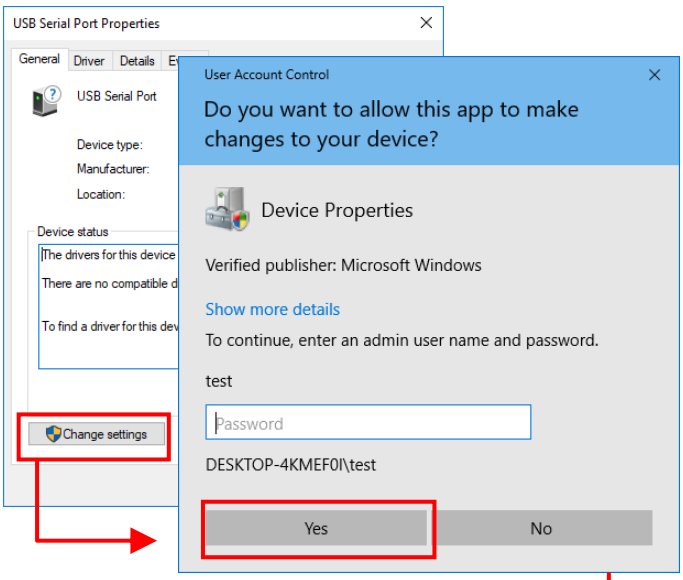


●Administrator authority

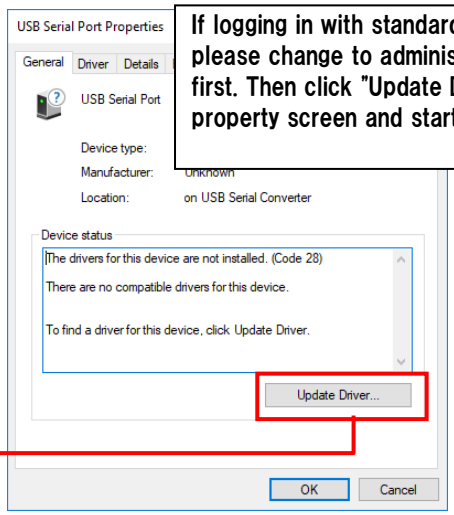


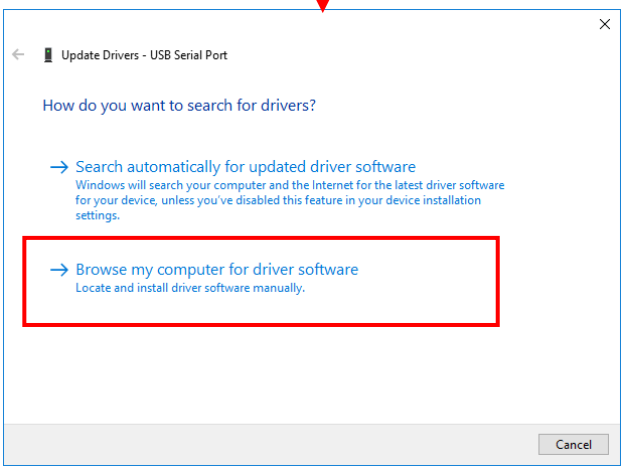
Click "Update Driver" on the property screen, Start the driver updating.

●Standard user authority

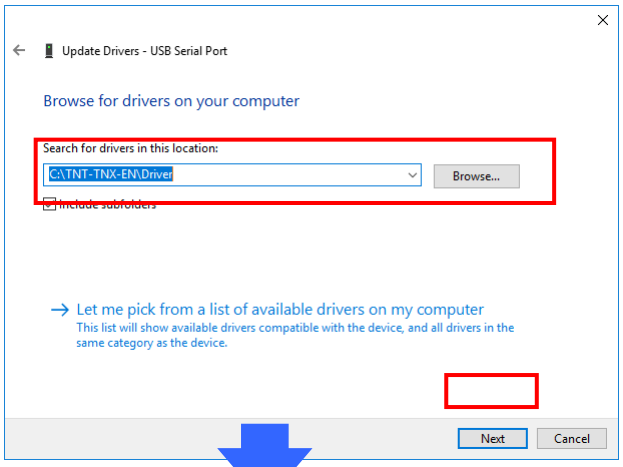


If logging in with standard user authority, please change to administrator authority at first. Then click "Update Driver" on the property screen and start the driver updating.

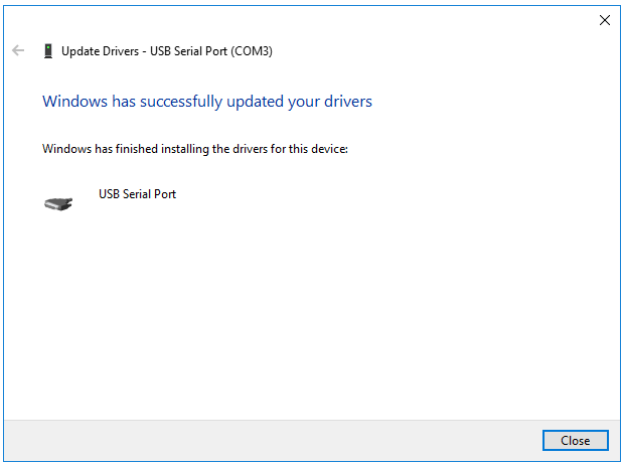




Click "Browse my computer for driver software" and proceed to the next.



Select "C:¥TNT_TNX_EN¥Driver" from "Browse" and click "Next"



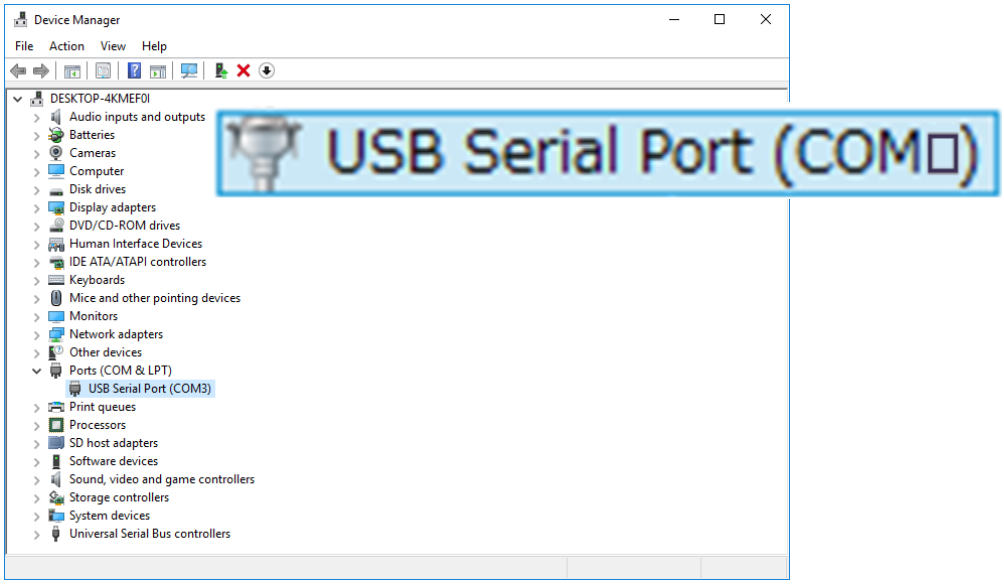
After installation is completed, the above screen will be displayed. Please click "Close" to finish.

3.4.Setting of COM Port

●Confirm COM Port

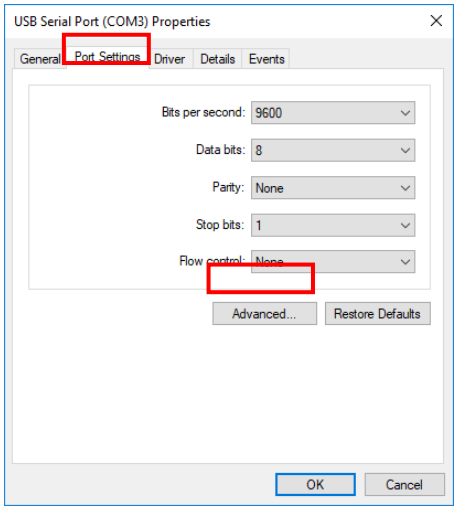
Execute the setting and confirmation of the COM Port No..

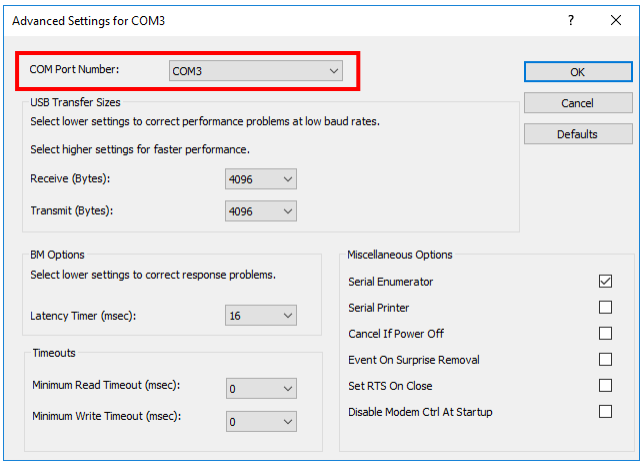
For selecting COM port No. at Digitorq_TNX startup, please check the COM port No. displayed on “Device Manager”.



●Setting of COM Port

In case the COM Port No. is not in COM1~COM15, it is necessary to modify the COM Port No..
For Modifying the COM Port No., Clicking the USB Serial Port item on “Device Manager” to open the property Screen, then select the "Port Setting" Tag and “Advanced Settings”.



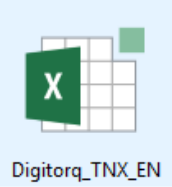


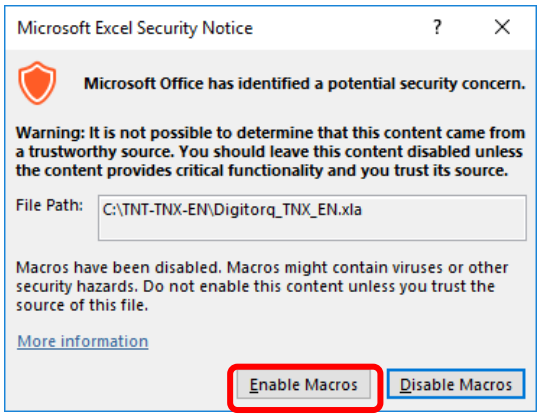
Above all, the Set-up of PC is over.

4.Add-in Software Description (Common)

4.1.Startup

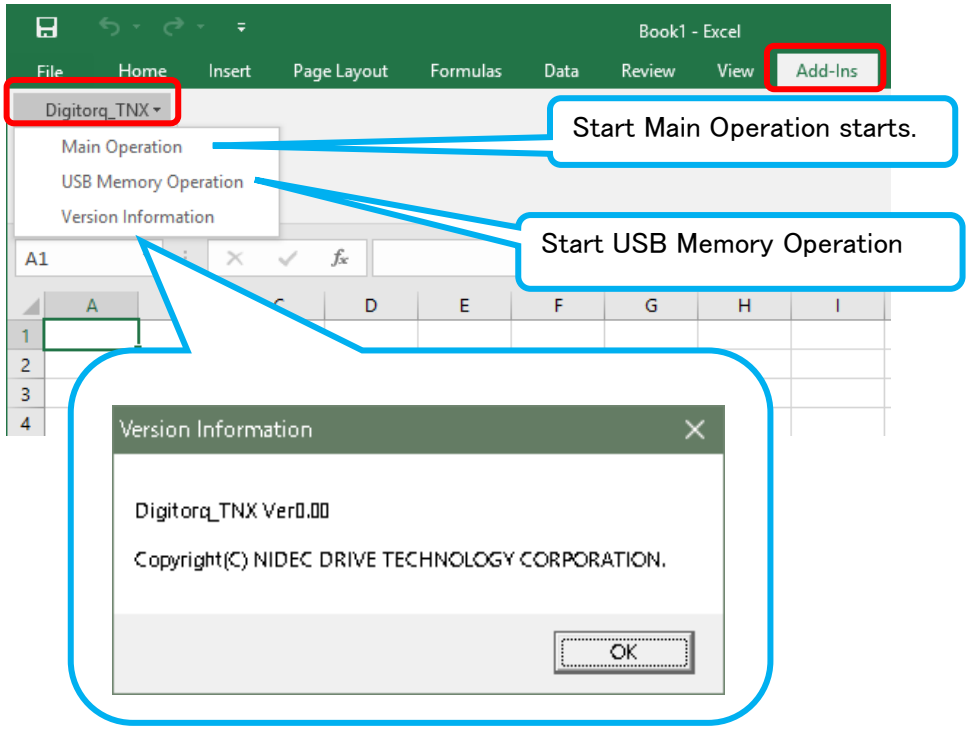
Double click the File "Digitorq_TNX.xla" file in "TNT_TNX_EN" folder of "C:\ " and active the Excel menu. In "Digitorq_TNX" that added to the Excel menu according to accessorial software. After this active "Digitorq_TNX" mainframe operation.





Join the TNX with the computer and power it on. Open a new work book, then choose "mainframe operation". Active" Digitorq _TNX USB operation" choose edition information then cofirm the edition of the software.

Besides, when TNX is unconnected or connected with the computer, please open a new work book and choose "USB memory operation" from the menu.

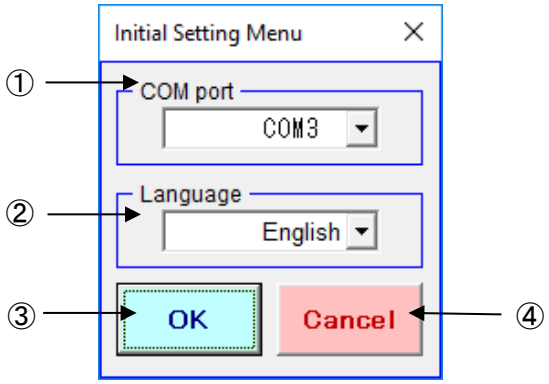


4.2. Initial Setting Menu

[Main Operation]

Indicate next menu when choose Main Operation. Choose communication port and language, then click "OK"

About Main Operation, please to accessorial software on P12 5 (Main Operation)



① Choose communication port.

Choose port from COM1 ～ COM15

② Choose language.

(Only choose [English] for expression)

③ OK

Into the Main Menu.

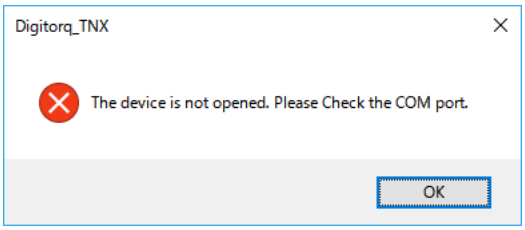
④ Cancel button.

Close the Initial Setting Menu and end "Digitorq_TNX"

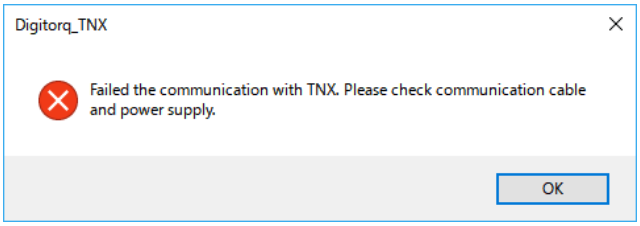
Click "OK" button when it can't communicate with TNX, it appears an information box as following.

Can't go into the next menu now.

① When you choose different communication port at "Select communication port" Or PC is not connected with the digital torque meter.



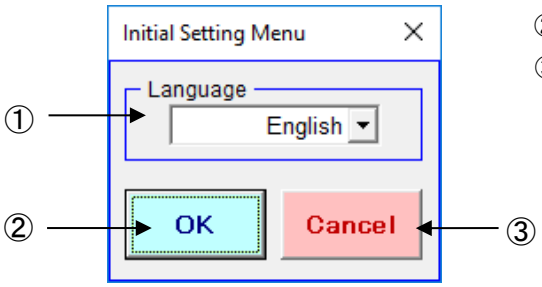
② When power of the digital torque meter turns off. Or other than those above errors happen.



[USB Memory Operation]

Indicate next menu after choose USB Menory Operation. Choose langnage then click "OK"

(About USB Memory Operation, please refer to the contents of accessorial software (USB Memory Operation) on P26 6.



① Choose language — Only choose "English" for expression.

② OK — Into the USB Memory Operation menu.

③ Cancel — Close the menu and end "digitorq_TNX.

5.Add-in Software Description (Main operation)

5.1.Main Operation

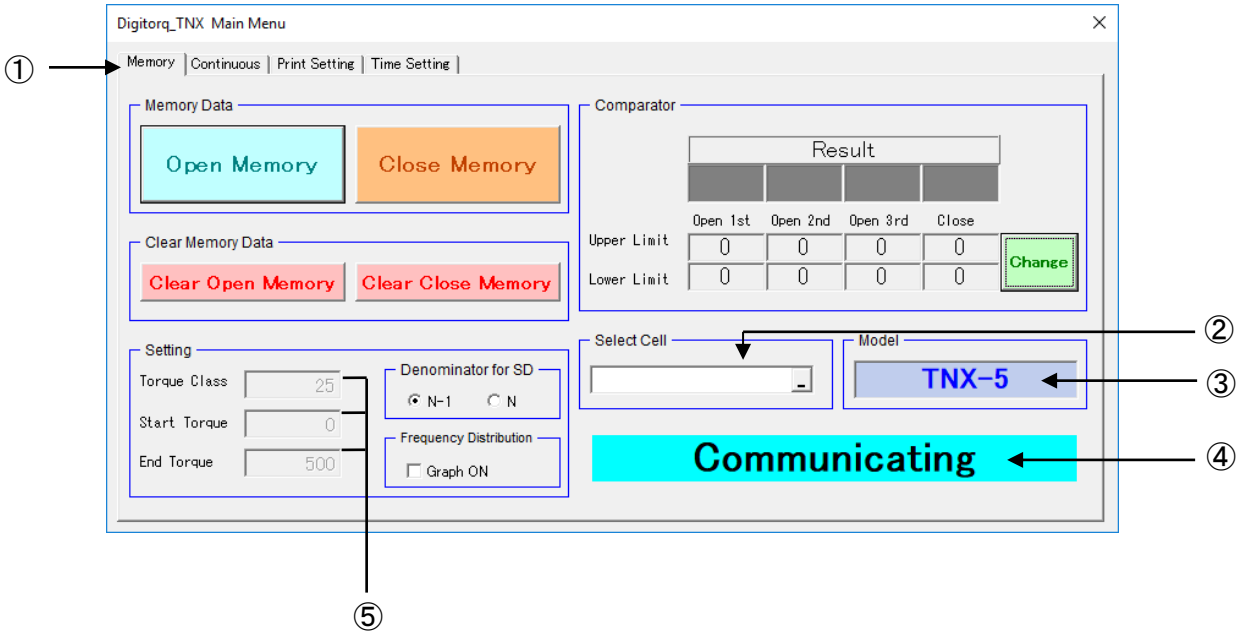
Join TNX to the computer with USB in Digitorq_TNX main operation, then can get the data of TNX torque moment in the Excel.

Set torque data that can be read. And set the inner time of TNX.

Click "OK" button in the initial menu during mainframe is operating. Open the menu of reading memory data.

5.2.Main Menu

Start up "Main Operation" of Digitorq_TNX then indicate the main input menu as following.



① Select tub of the mode : Select from “Memory”, ”Continuous”, ”Print Setting”, ”Time Setting” according to you want to use.

② Choose cell : Choose the beginning cell for share the data have been read (only in case of no frequency distribution graph).

③ Information of types : Indicate continuous types of TNX.

④ Communication status : Indicate the communication of TNX.

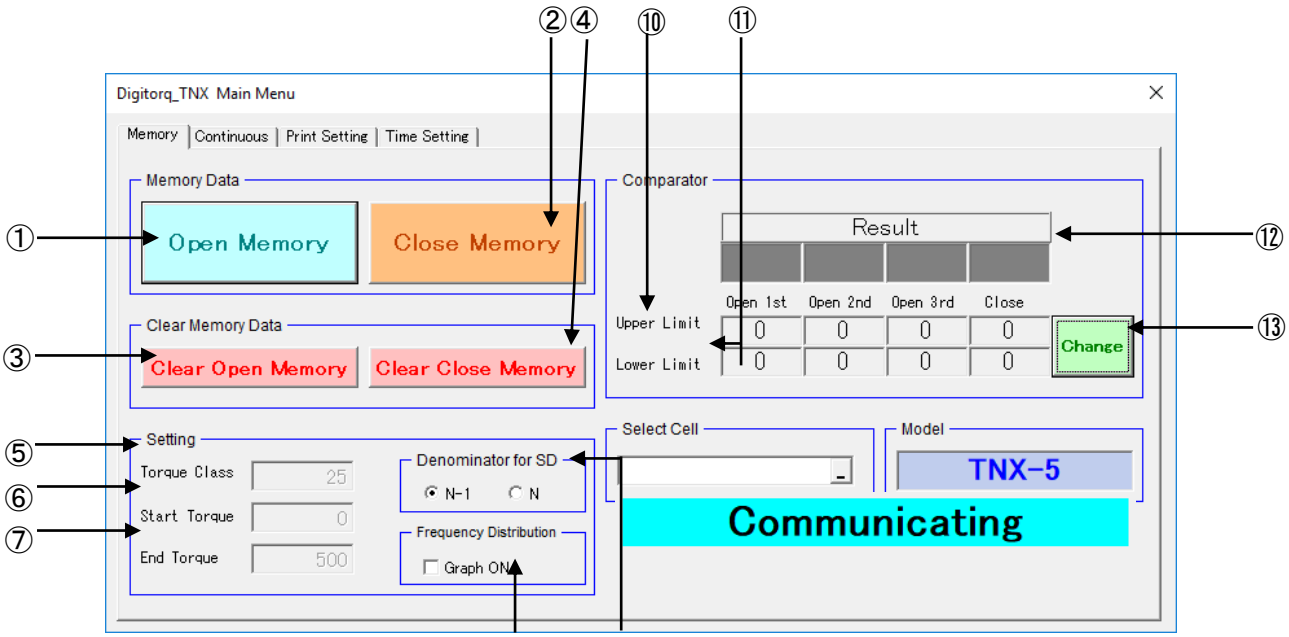
- ・Ordinary state : NO indication
- ・Well-balanced state : indicate [Communicating]
- ・Singularly communication : indicate [Connection Error]

⑤ Input boxes : Input directly.

5.3.read memory data

In the mode of reading memory data, you can save the data of torque value to Excel book.

[Main menu of Memory Data]



① Open memory data : Read the MAX value data that have been read of open torque then save it to unit standard.

② Close memory data : Read the biggest value data that have been read of close torque then save it to unit.

③ Cancel opening memory data : Cancel all max value data that have been saued and landed of open torque click it then indicate menu to confirm, click [yes] to cancel all.

④ Cancel close memory data : Cancel all max value data that have been saued and landed of close torque click it then indicate menu to confirm click [yes] to cancel all.

State of communication

⑤ Torque Class : Decide the width of torque of each area when the frequency distribution graph creation. Can only possibly input when the Graph ON.

⑥ Start Torque : Decide the minimum Torque Class that indicate in the graph when the frequency distribution graph creation.

Can only possibly input when the Graph ON.

⑦ End Torque : Decide the value that include maximum Torque Class that indicate in the graph when the frequency distribution graph creation.

Can only possibly input when the Graph ON.

*About the input range of ⑤, ⑥, ⑦ please refer to [8. Input range list] in P34.

⑧ Denominator for SD : Choose the denominator from N-1, N. When computing the standard deviation.

【Initial state: N-1】

⑨Frequency Distribution frequency : When the Graph ON, After loading memory data, move the sheet and create a graph. Do not move sheets or create graph when the Graph OFF.

【Initial state: OFF】

⑩ upper limit value : Indicate the upper limit value of open/close. The upper limit value of open indicate the biggest torque value of open setting in F01 of 1st ～ TNX

【 Initial value: The determinant value of upper limit that read from TNX 】

⑪lower limit valu : Indicate the lower limit value of open/close. The lower limit value of close indicate the Max torque value of open setting in F01 of 1st ～ TNX.

【 Initial value: The determinant value of lower limit that read from TNX 】

⑫ Result : When the upper/lower limit judgment is work, it appears result box indicate "OK","NG".

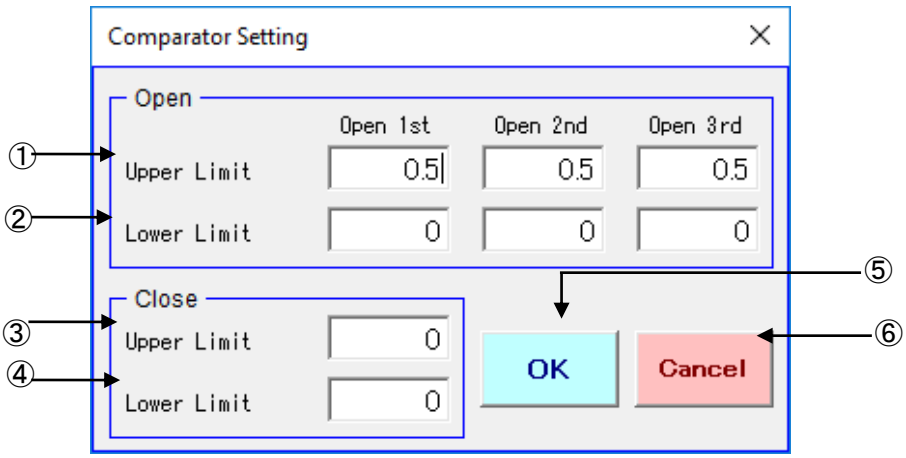
- OK judgment :lower limit value ≦ all torque that have been tested out ≦ upper limit value
- NG judgment : At least one torque value could satisfy the requirements below upper limit value ＜ test out the torque value

or

test out the torque value ＜ lower limit value

⑬ Change : Open the Comparator Setting screen.

[Comparator Setting]



①Upper limit value of open (※): Indicate the upper limit value of open torque.
(from left 1st 2nd 3rd) Input with keyboard when change the value.
【initial value: upper limit value that read from TNX 】

②Lower limit value of close(※): Indicate the lower limit value of open torque.
(from left 1st 2nd 3rd) Input with keyboard when change the value
【initial value: lower limit value that read from TNX 】

③Upper limit value of close (※): Indicate the upper limit value of close torque.
Input with keyboard when change the value.
【initial value: upper limit value that read from TNX 】

④Lower limit value of close (※) : Indicate the lower limit value of close torque.
Input with keyboard when change the value.
【initial value: lower limit value that read from TNX 】

⑤ OK : sent the contents changes to TNX.

⑥Cancel : Return to the Main Menu without charging the upper/lower limit value.

※ Input range of upper/lower limit value is 0 ～ Rated torque.（Please refer input range list）Do not input when the upper limit value ＜ lower limit value.

※ Judgment of read torque date, whether read memory data make or continuous read date mode, are all get through comparing absolute value of torque data with upper/lower limit value can only put in positive value as upper/lower limit value.

- Expressions of Standard Deviation.

Choose the expressions of Standard Deviation from "Denominator of SD" in P13 ⑧

Formula is as follow.

●N-1

$$\text{Standard Deviation} = \sqrt{\frac{\sum (Xi - Average)^2}{\mathrm{N}-1}}$$

Average ＝ ∑Xi / N
Xi ＝ measuring data
N ＝ number of memory data

●N

$$\text{Standard Deviation} = \sqrt{\frac{\sum (Xi - Average)^2}{\mathrm{N}}}$$

Average ＝ ∑Xi / N
Xi ＝ measuring data
N ＝ number of memory data

5.3.1.Memory data format

Click open/close button of memory data read the memory data in Excel.

	A	B	C	D	E	F	G
1	Open Memory Data				(1)		
2							
3	Date	3/25/2008 4:42:57 PM			(2)		
4	Prepared by				(3)		
5	Remarks				(4)		
6							
7	Temperature				(5)		
8	Humidity(%)				(6)		
9							
10	Model	TNX-5			(7)		
11	Unit	Nm			(8)		
12	Denominator for SD	N-1			(9)		
13							
14	Number of Data	4			(10)		
15		1st	2nd				
16	Maximum	0	0		(11)		
17	Minimum	0	0		(12)		
18	Average	0	0		(13)		
19	Standard Deviation	0	0		(14)		
20							
21	Upper Limit	0.05	0.05		(15)		
22	Lower Limit	0	0		(16)		
23							
24	Number of High NG	0	0		(17)		
25	Number of Low NG	0	0		(18)		
26	Defective Rate(%)	0	0		(19)		
27						(24)	
28			(23)				
29	(20)	(21)	(22)	Open 1st	(25)	Open 2nd	
30	Memory Number	Date	Time	Result	Torque (Nm)	Result	Torque (Nm)
31	1	08/03/25	16:24:16	O	0	O	0
32	2	08/03/25	16:24:18	O	0	O	0
33	3	08/03/25	16:24:20	O	0	O	0
34	4	08/03/25	16:24:22	O	0	O	0
35							

Download Open Memory data

Contents of items

(1) Sorts of memory data Indicate open/close memory.	(14) Standard Deviation Indicate the standard Deviation of torque data.
(2) Data Indicate the data the experiment starts.	(15) Upper Limit Indicate the upper limit value currently set.
(3) Tester Make input box.	(16) Lower Limit Indicate the lower limit value currently set.
(4) For reference Make input box.	(17) Number of High NG Indicate the number of high NG in all memory data.
(5) Temperature Make input box.	(18) Number of Low NG Indicate the number of low NG in all memory data.
(6) Humidity Make input box.	(19) Defective Rate Indicate the defective rate in all memory data.
(7) Type information Indicate the type of TNX.	(20) Memory Number Get the memory code of memory data.
(8) Unit Indicate the unit of TNX.	(21) Data Indicate the detailed data when test the torque.
(9) Denominator of Standard Deviation Indicate the Denominator of Standard Deviation chosen in main input menu.	(22) Time Indicate the time when test the torque.
(10) Date NO. Indicate the number of torque date that have been read.	(23) Result The result of upper/lower limit judgment. (H : High O : OK L : Low)
(11) MAX Value Indicate the MAX value of torque data.	(24) MAX torque of open (Only in case of open) Indicate the max torque of open in F01 of mainframe of TNX
(12) Min value Indicate the min value of torque data.	(25) Torque (unit) Indicate the torque value of memory data ※
(13) Average Indicate the average of torque data.	

※ The lines torque data id change according to the mac torque of open chosen in F01 of mainframe of TNX. The torque data should be in a line, when you import the close memory data.

- About Number of High NG, Number of Low NG, and Defective Rate.
-

When reading the memory data in torque data that recorded in memory,
the number of memory data whose upper/lower limit judgment result is H (torque > upper limit value), is set as the Number of High NG.

The number of memory data whose upper/lower limit judgment result is L (torque < lower limit value), is set as the Number of Low NG.
The Judgment results of each torque value is recorded in the previous item (23)

In addition, the result of upper/lower limit judgment is add up all the memory data, then decide all the memory data and computing the result, display Defective Rate.
The Formula of Defective Rate is as following.

$$\text{Defective Rate} = \frac{\text{Number of High NG} + \text{Number of Low NG}}{\text{All memory data number}} \times 100$$

When both upper limit value and lower limit value are "0", Number of High NG,
Number of Low NG, and Defective Rate are not indicated.

5.3.2.Frequency distribution graph

- The frequency distribution chart can be make automatically in the make of memory data.
- The chart can't be make in if don't choose " make chat on "on in the main input menu.
- If the state of making chart is "ON" when reading memory data it will odd the chart book (name : Graph1 ～ (consecutive)) at the last book.
- Make a graph in one book and finish reading the memory data. Then start to make graph.

(1)Contents of graph

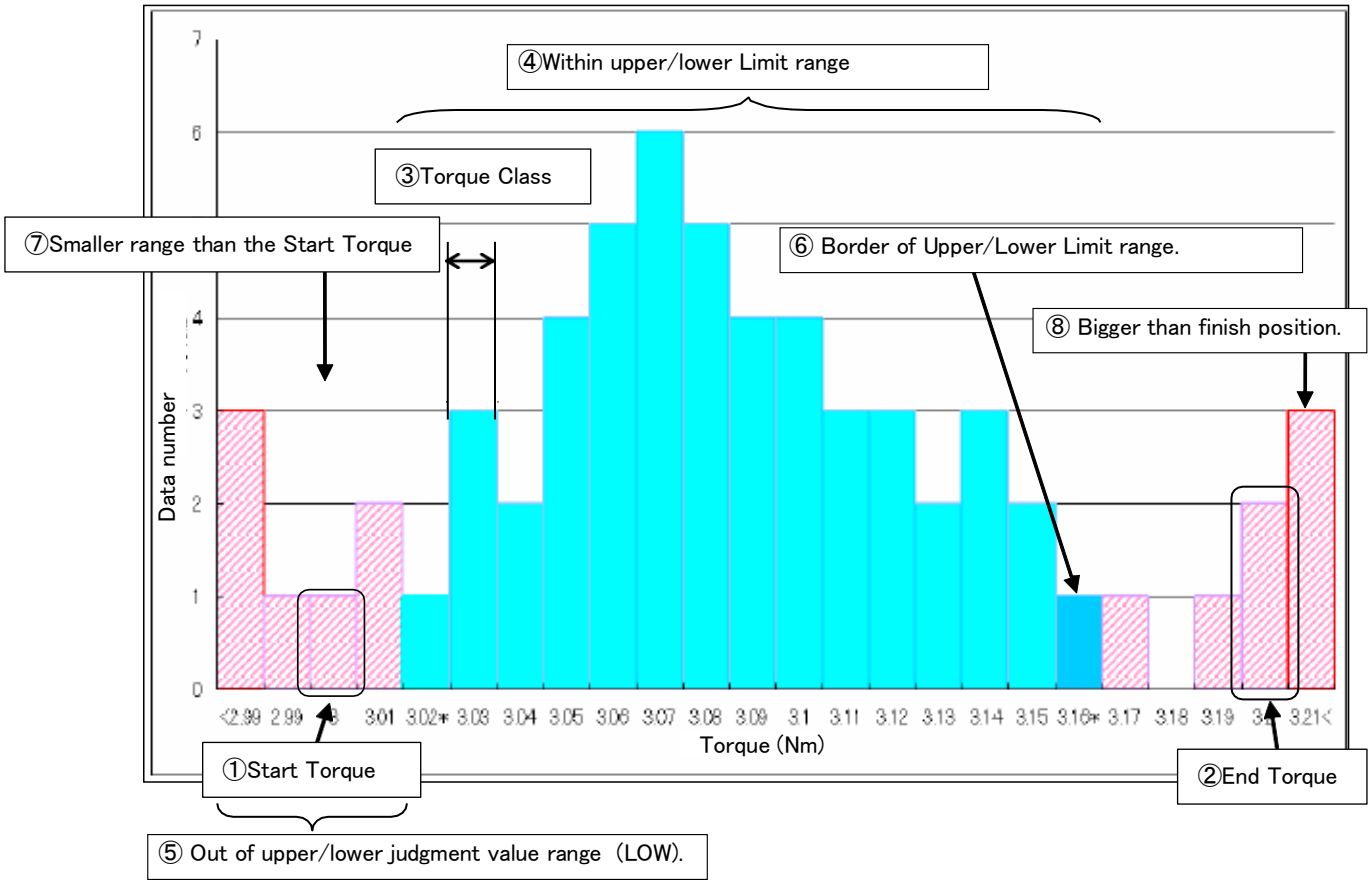
X-coordinate: Width of torque. Y-coordinate: Number of data.

The Torque Class, Start Torque (the min torque indicated in the graph) and End Torque (contain the max torque in the graph) are the value entered on the Main Menu.

The division number is set automatically from Torque Class, Start Torque, and End Torque.

(2)The format of graph (when determination upper/lower limit is ON)

When upper/lower limit judgment is on (except the case as determinant upper limit = determinant lower limit=0), indicate the graph below.



① Displays the class of "Start Torque" entered in the Main Menu.

② Displays the class of "End Torque" entered in the Main Menu

③ The class range width is “Torque Class" entered in the Main Menu

④ The bar graph for classes within the upper/lower limit judgment values range is displayed in aqua.

⑤ The bar graph for classes beyond the upper/lower limit judgment values range is displayed in pink.

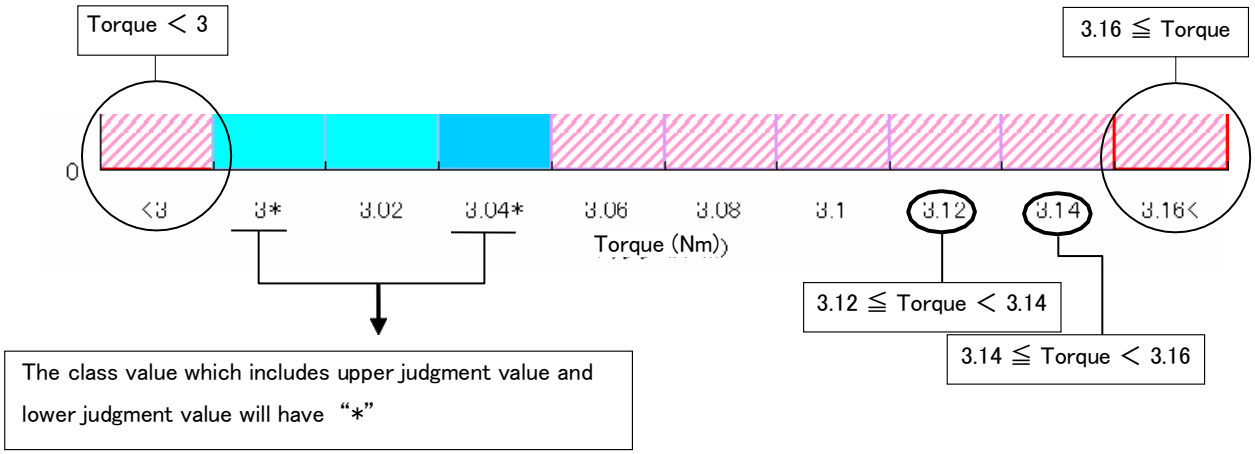
⑥ If there are torque data entries beyond the upper/lower limit judgment values in a class including the upper/lower limit judgment values, the bar graph for that class is displayed in blue.

⑦The torque data before Start Torque is distributed in the first class (enclosed in red lines) of the graph.

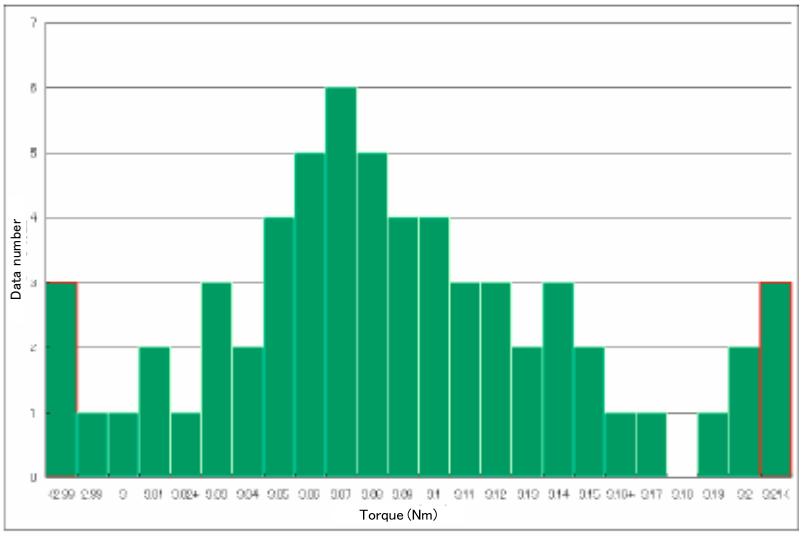
When Start Torque is 0, this class is not displayed.

⑧ The torque data after the class at End Torque or later is distributed in the first class (enclosed in red lines) of the graph.

• The class values in the graph are displayed as in the figure below.
The each class has the range of "Class value ≤ Torque value < Next class value on the right". The torque value of the memory data that fits in that range will be categorized to its class.
The above (7) is the range of "Torque value < Start position", and (8) is the range of "(Value of the class including the end position + Class width) ≤ Torque value".



(3)Graph format (when the upper/lower limit judgment is OFF)
When the upper/lower limit judgment is OFF (unless upper limit judgment value = lower limit judgment value = 0), the following graph is displayed without color coding for each class.

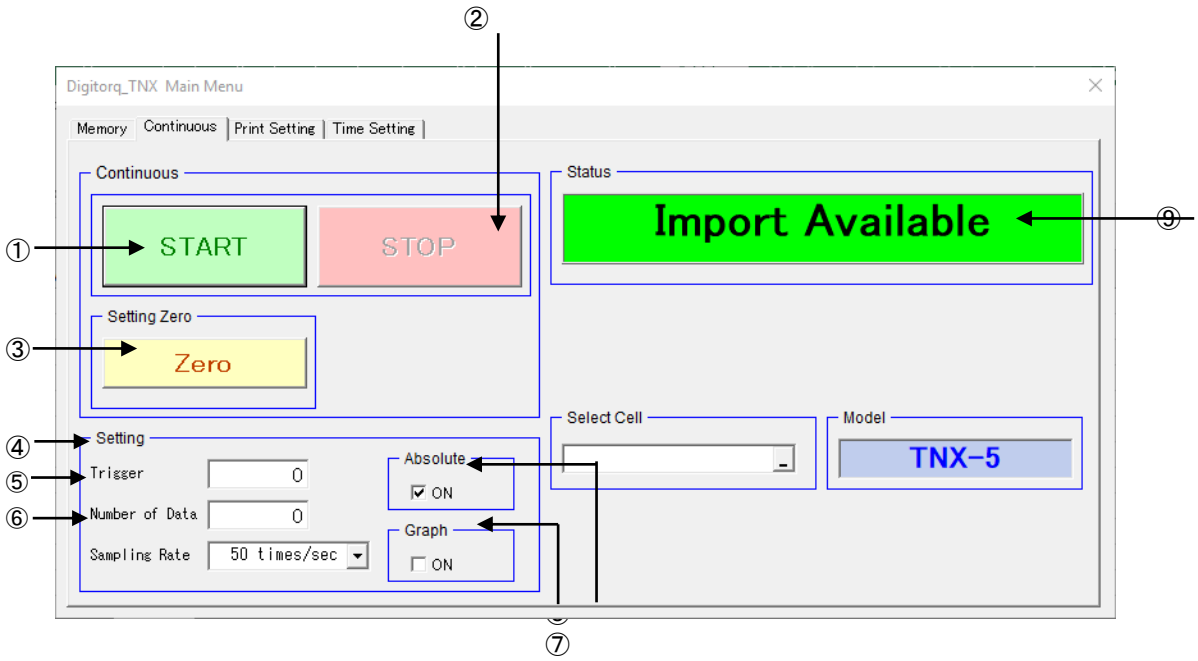


Upper/lower judgment is OFF

- When Max torque value of open is 2nd or 3rd the graph turn 2lines or lines.
Various graph are different colours according to the ON/OFF when determinating upper/lower limit.

5.4.Continuous data inport

In the continuous data import mode, torque values measured by the digital torque meter can be imported into Excel on a real-time basis.



(1) START button : Start importing the continuous data of torque values.
(2) STOP button : Stop importing the continuous data of torque values.
The click action is enabled only when the continuous data is being imported.
(3) Zero button : Return the display of the digital torque meter main unit to 0.
(4) Trigger : Determine the torque value to start importing the continuous data.
When the condition of Trigger ≤ | Torque | is satisfied, start importing the continuous data.
Entering 0 disables the trigger, and the continuous data import starts at the point when the START button is clicked. (For the input range, refer to "6. Input Range List" on page 27.
(5) Number of data : Specify the number of continuous data entries to be imported into Excel from 0 to 32,000.
When 0 is entered, the number of data entries to be imported is 32,000.
(6) Sampling Rate : Select the interval of importing the continuous data into Excel.

- "20 times/second" : Import approximately 20 torque value entries per second.
- "50 times/second" : Import approximately 50 torque value entries per second.
- "100 times/second" : Import approximately 100 torque value entries per second.

(7) Absolute ON : Check this option to display the torque data on the closing torque as the absolute value when importing the continuous torque data on the closing torque. When unchecked, the torque data on the closing torque is displayed as negative. [Default: ON]
(8) Graph ON : Check this option to move the sheet after importing the continuous data, and create a continuous data graph. When unchecked, the sheet will not be moved, and the continuous data graph will not be created. [Default: OFF]
(9) Status : The following status is displayed.

- Import Available : Shows the status that the continuous data can be imported
- Waiting : Shows the status of waiting for trigger
- Importing : Shows the status that the continuous data is being imported
- Complete : Shows the status that a single continuous data import is complete
- Can't Import : Shows the status that the continuous data can not be imported due to communication error

5.4.1.Continuous Data Format

Click the START button to import the continuous data into Excel as follows:

	A	B	C	
1	Continuous Data			(1)
2				
3	Date	3/25/2008 4:52:47 PM		(2)
4	Prepared by			(3)
5	Remarks			(4)
6				
7	Temperature			(5)
8	Humidity(%)			(6)
9				
10	Model	TNX-5		(7)
11	Unit	Nm		(8)
12				
13	Number of Data	15		(9)
14	Maximum	0.002		(10)
15	Minimum	0		(11)
16	Average	0.001		(12)
17				
18	(13)	(14)		
19	Time(sec)	Torque (Nm)		
20	0	0.001		
21	0.05	0.001		
22	0.1	0.001		
23	0.15	0.001		
24	0.2	0.001		
25	0.25	0.001		
26	0.3	0.001		
27	0.35	0		
28	0.4	0.001		
29	0.45	0.001		
30	0.5	0.001		
31	0.55	0.001		
32	0.6	0.001		

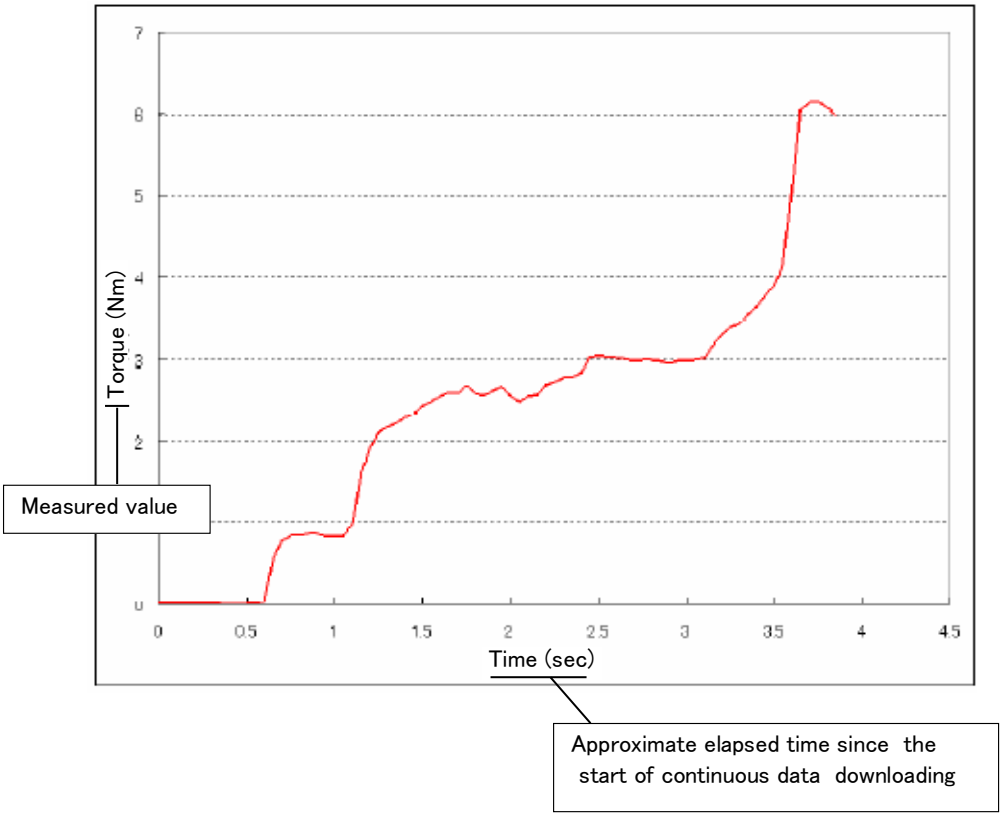
Download Continuous data

(1) Memory data type Displays "Continuous data"	(8) Unit Displays the unit for the digital torque meter
(2) Date Displays the date and time when the test starts.	(9) Number of Data Displays the number of data entries of the imported continuous torque data
(3) Prepared by The write column is created	(10) Maximum Displays the maximum value of the imported continuous torque data
(4) Remarks The write column is created	(11) Minimum Displays the minimum value of the imported continuous torque data
(5) Temperature The write column is created	(12) Average Displays the average value of the imported continuous torque data
(6) Humidity (%) The write column is created	(13) Time (sec)* Displays the elapsed time since the continuous torque data import starts
(7) Model Displays the model for the digital torque meter	(14) Torque (Nm) Displays the continuous torque data

*(13) Time (sec) is an approximate value, and does not ensure the correct elapsed time display.

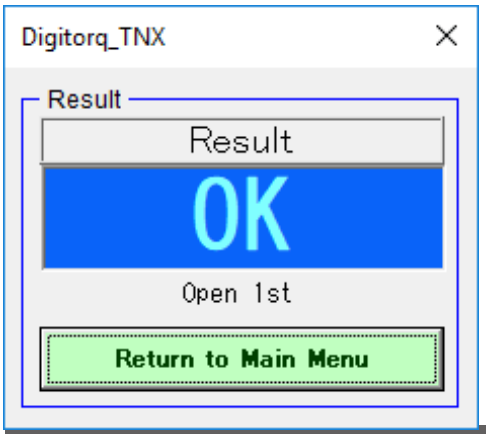
5.4.2.Continuous data graph

• In the continuous data import mode, a continuous data graph can be automatically created.
• When "Graph ON" is not selected in the Main Menu, the graph will not be created.
• When importing the continuous data, if the graph creation is ON, add the worksheets (sheet name: from Graph1 (serial number)) to the last sheet, and import the continuous data to create a graph.

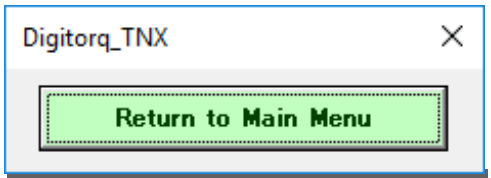


5.5.Return Screen

When the memory data import or continuous data import is complete, the following return screen is displayed.
The bottom-left window is displayed when the upper/lower limit judgment is ON, and the bottom-right window is displayed when the upper/lower limit judgment is OFF, at the same time when a graph is created.
Click "Return to Main Menu" to return to the Main Menu.



When upper and lower judgment is ON.

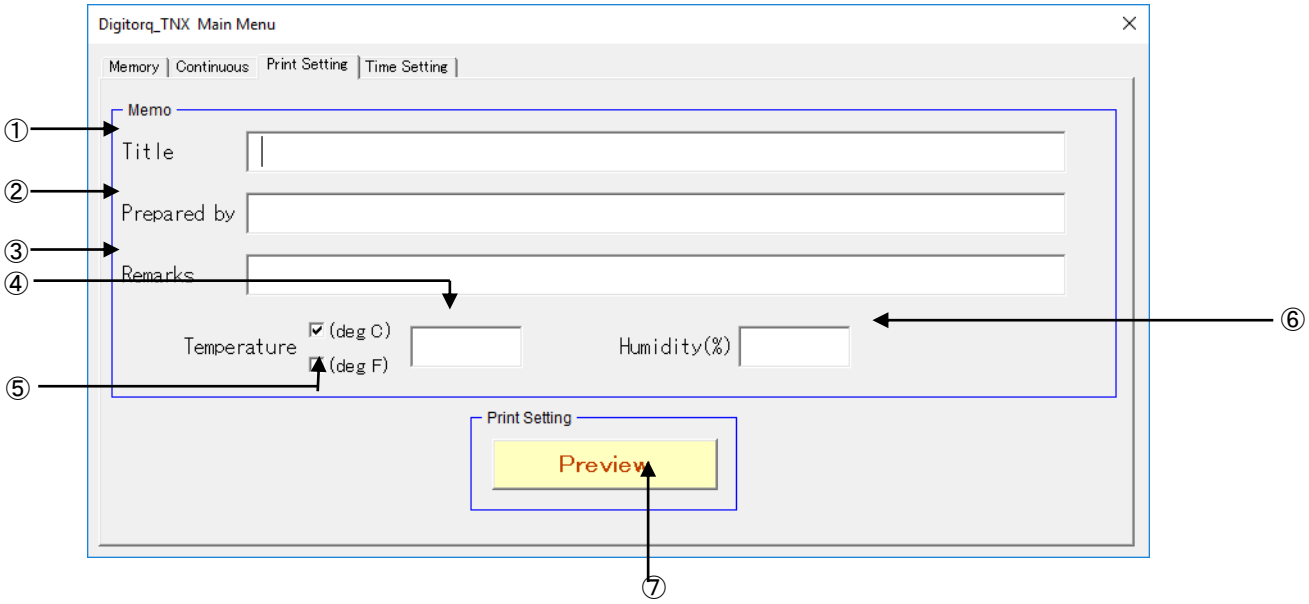


When upper and lower judgment is OFF.

※ Delirer determinant menu when open 2rd, 3rd, and the doing various determinationl.

5.6.Print Setting (Main Operation)

In the print setting, the graph sheets created when the memory or continuous data has been imported can be changed into a one-sheet report format.
Write the contents entered in Memo into Excel to display the print preview.
*This feature is enabled only for the graph sheets created when the memory or continuous data has been imported.



① Title : Can input words into the title of graph(※ 1).

② Tester : Can input tester's name into the tester's box of graph.

③ Remarks : Can input word into reference box of graph.

④ Temperature : Can input temperature.
【 Input range: five digits included in 0 ～ 99999 (include decimal) 】

⑤ Temperature unit (˚ C/ ˚ F) : Can choose the unit of temperature from (℃ / ˚ F).

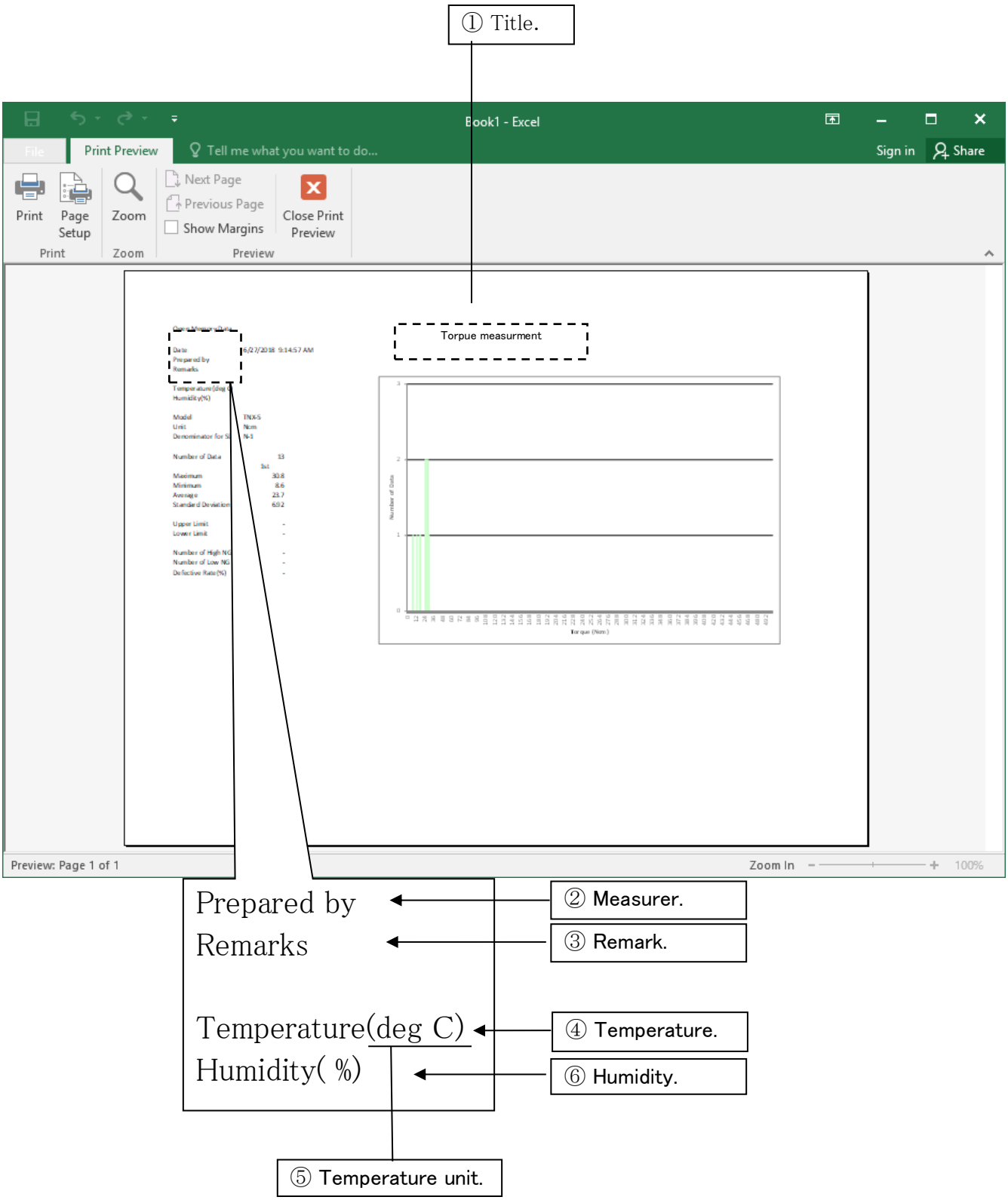
⑥ Humidity(%) : Can input humidity can input directly or input in the numeric button menu.
【 Input range: five digits included in 0 ～ 99999 (include decimal) 】

⑦ Print preview. : Click the button, the contents inputted in ①～⑥ is reflected to Excel, then open print preview menu (※ 2).

※ 1 Notes about title tester the input of foe reference.
It may lead to be -of word if the word inputed is too long

※ 2 Notes about print input menu.
① Although, the print range can be set automatically as click preview button but the print range may be different according to the difference of environment and use print function of Excel.
② When printing please click "print" button of print preiew to operate.

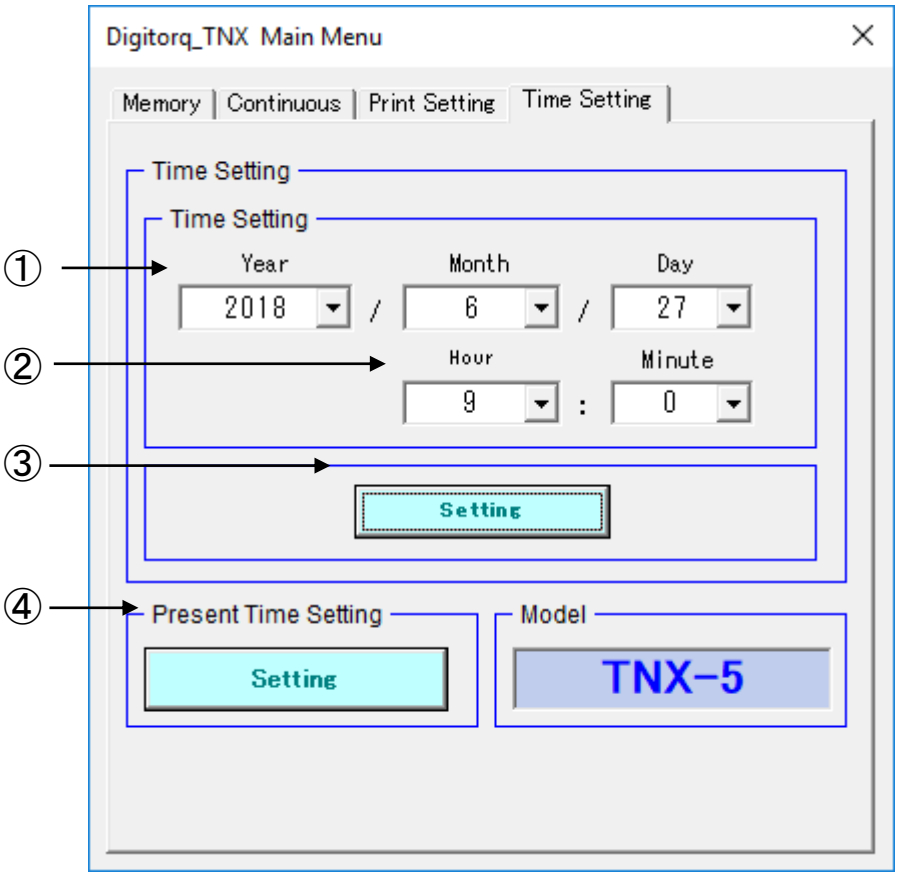
- Print Preview Menul.



5.6.Time setting

Through time set can set the time of clock inside TNX.

Time loading sowe data when reading the data indicated in USB Operation and Main Operation.



① Date : Choose year, month, day.【 initial value : year, month, day of TNX. 】

② Time : Choose hour minute.【 initial value : hour minute. 】

③ Input time : Click the button input time in TNX.

④ PC time setting : Second starts to calunlate from zero. please lonfirm the compnter time before setting time.

※ Thongh the time setted by TNX would indicated when open the time set menu the time can't be indicated truthfully.

6.Add-in Software Description (USB Memory Operation)

6.1.USB Memory Operation

USB Memory Operation of Digtorq_TNX can load the TNX torque data saved in USB memory and set print of the torque data loaded

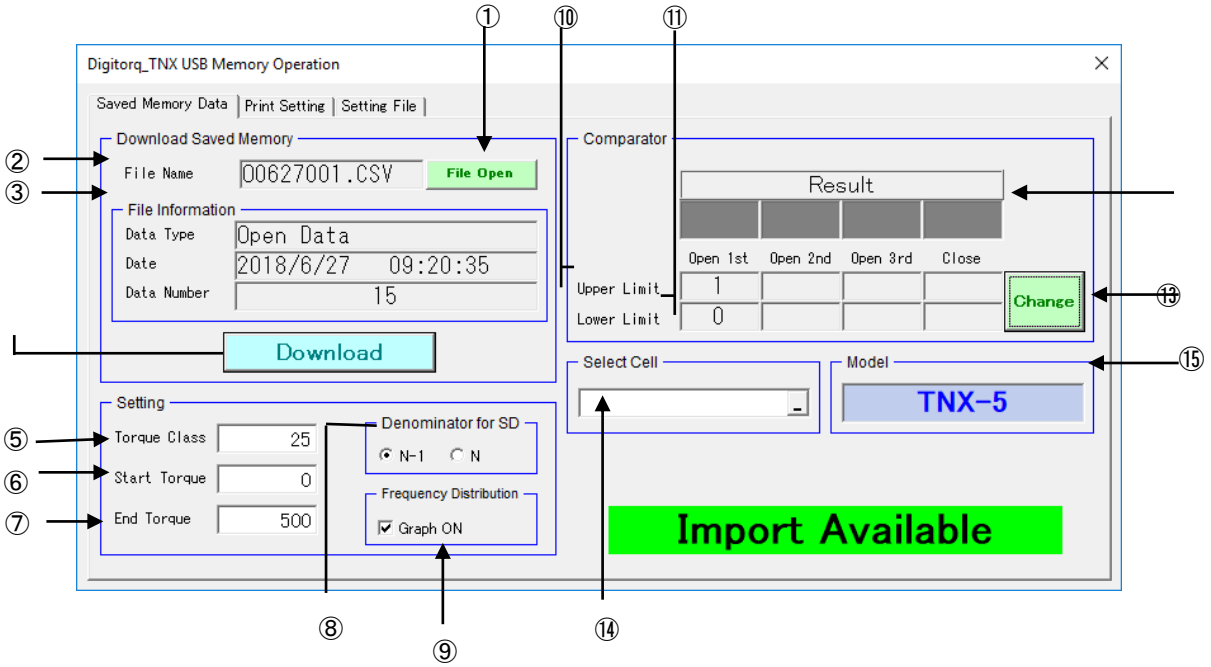
Moreover TNX can set upper/lower limit value Max/Min torque of open from of test open/close and "file setting" no need to connect the computer with TNX when doing the operation

click "ok" in the Initial menu then the USB Memory Operation screen will open.

6.2.Saved memory Data

In the mode of loading and sawing the save data you can load the torque data saved by the saving function of TNX to Excel.

Menu of inputing determinant upper/lower limit value



① File Open : Choose torque data saved by the saving function of TNX

② File Name : When selecting a file, the file name is displayed.

③ File Information : When selecting a file, data type, recorded date, number of data are displayed.

④ Download : Input the torque data of file into cell

⑤ Torque Class : Set the width of area when making the frequency distribution graph

⑥ Start Torque : Only can input when graph make is ON decide the Min torque value indicated in the graph when making frequency distribution graph

⑦ End Torque : Only can input when the graph make is on, decide the Max torque value indicated in the graph when making frequency distribution graph

⑧ Denominator of SD: Only can input when the graph make is on, about the input rang of 5.6.7, please refer to "8. Range of Input" in p34 choose N-1 or n as denominator when calculating the Standard Deviation

[Initial state : N-1]

⑨ Frequency distribution graph : Confirm Sawing graduate data and moving sheet the finish the frequency. distribution graph can't finish the graph without confirmation. [Initial state : off]

⑩ Upper limit :Indicate upper limit value. [initiad state :choose blank subject and load the data from file]

⑪ Lower limit :Indicate lower limit value. [inital state :choose blank subject and load the data from file]

⑫ Result : The judging result "OK" or "NG" will be displayed in the window when the judgment of upper/lower limit is enable.

- OK:

lower limit value ≦ all torque value tested ≦upper limit value.

- NG: At least one torque value can satisfy the following conditions. upper limit value ＜ torque value tested

or

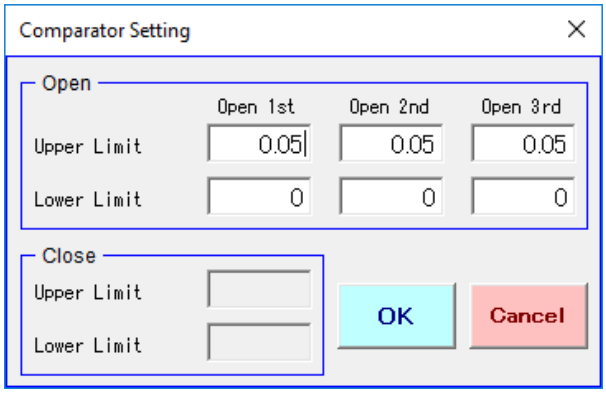
torque value tested ＜lower limit value

⑬ Change : Open the menu of input upper/lower limit value.

⑭ Choose cell ; Choose start cell to save loading data cannot work when making graph.

⑮ Type information : Indicate the type of TNX of torque value.

The menu of Comparator Setting



①Upper Limit (※ 1) (from the left, 1st, 2nd, 3rd) :Indicate upper limit value of open Input with keyboard directly when changing. (※ 2) 【 Initial value: Upper limit value from torque value file that have been chosen. 】

②Lower limit (※ 1) (from the left, 1st, 2nd, 3rd) : Indicate lower limit value of open. Input with keyboard directly when changing value. (※ 2) 【 Initial value: Upper limit value from torque value file that have been chosen. 】

③Upper limit : Indicate upper limit value of close Input with keyboard directly when changing value. (※ 3) 【 Indicate value: Lower limit value from torque value file that have been choose. 】

④Lower limit : Indicate lower limit value of close Input with keyboard directly when changing value. (※ 3) 【 Initial value: Lower limit value from torque value file that have been chosen. 】

⑤OK : Decide the changement.

⑥Cancel : Can't change upper/lower limit value, return to main menu.

※ 1 The range of determinant upper/lower limier value is 0 ～ Setted torque. (⑭ is type information) At the same time, the possible input number below decimal point is included in the range of tope.

(refer to "8. Range of Input" in P34) But it can't input when upper limit value ＜lower limit value. And the decision of torque value saved is step by the comparation of absolute value of torque value and upper/lower limit value. So only can input when the upper/lower limit value is correctly.

※ 2 Can't input when torque data file that have been choose is in close.

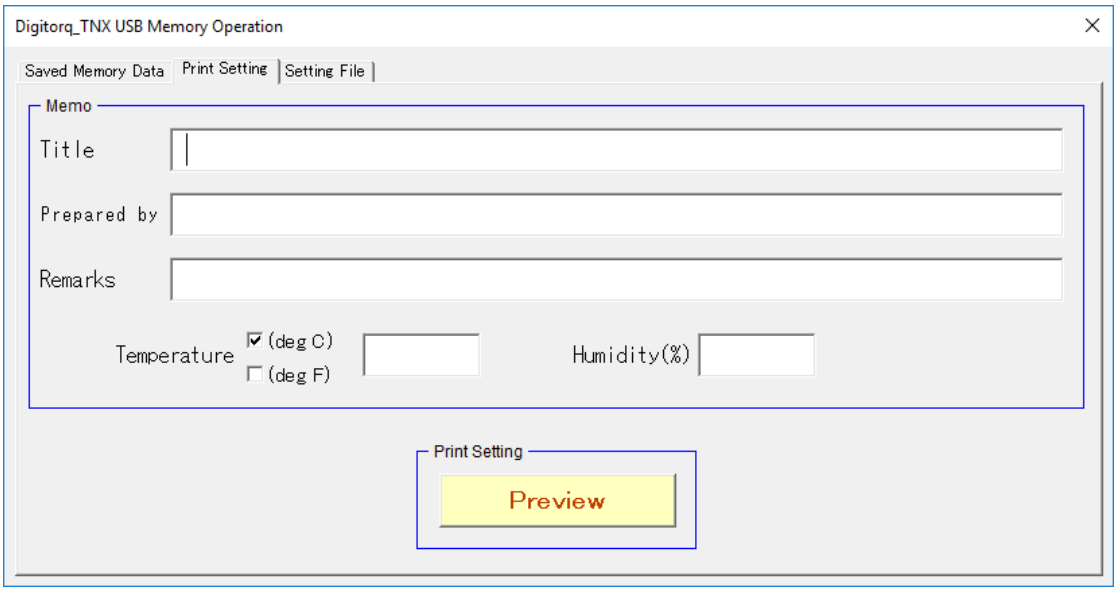
※ 3 Can't input when torque data file that have been choose is in open.

6.3.Print Setting (USB Memory Operation)

In print set, you can set the graph made of load save data and continuous data as declaration format. Put the contents recorded in record input box into Excel and indicated by preview form.

※ Only Work on the graph made by Download Saved Memory of USB Memory Operation.

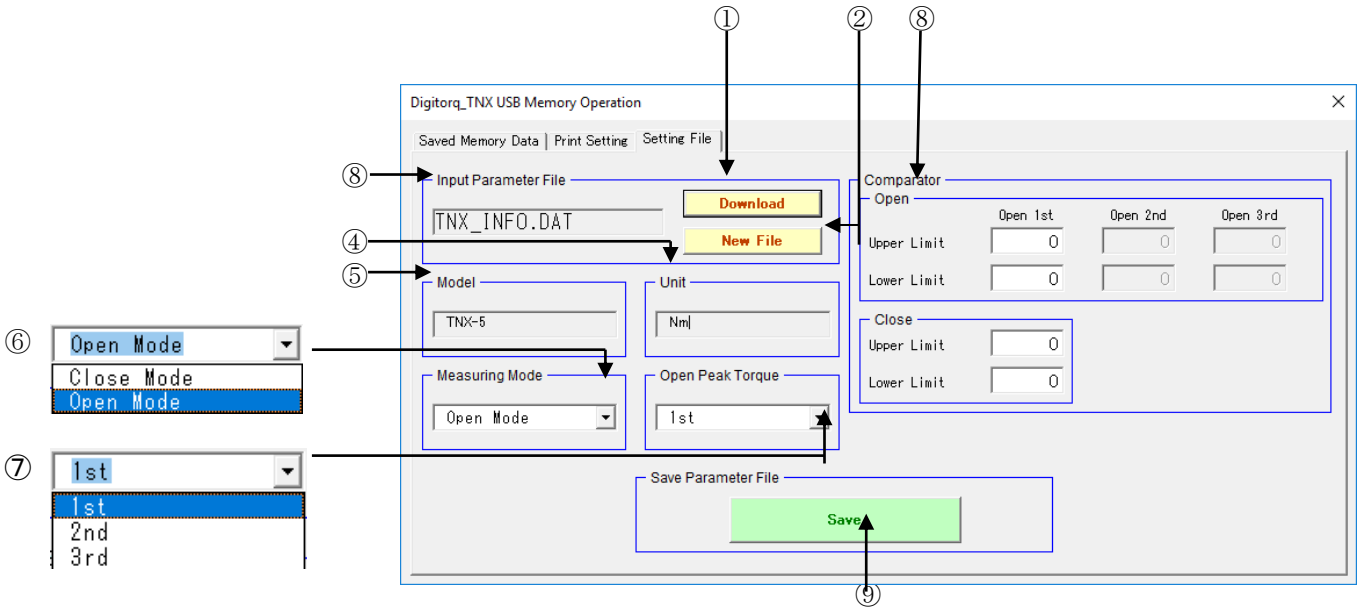
The print setting of this function and Main Operation are the same. About operation please refer to 5.6. Print Setting.



6.4.Make setting File

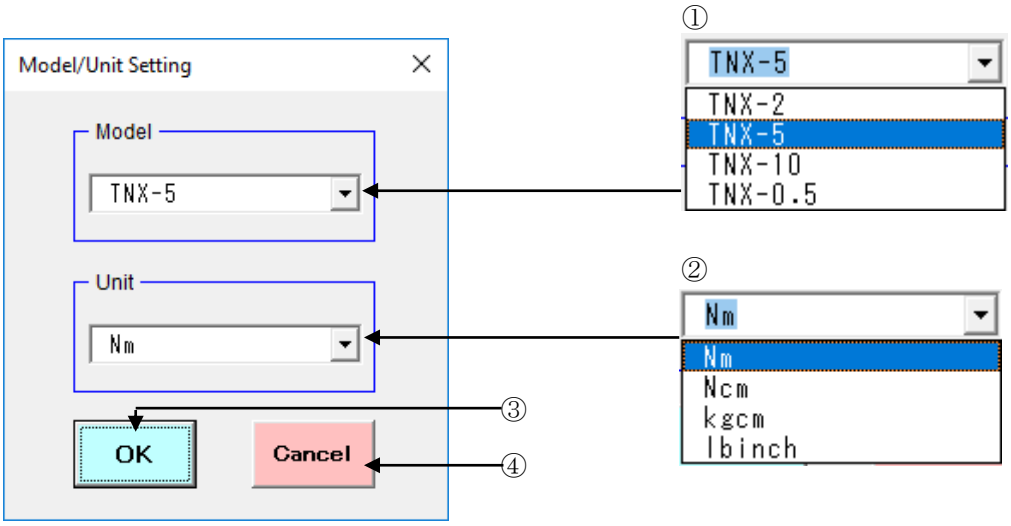
When the set file is finished, it can set test mode automatically as the power of TNX is on make MAX torque of open and file of upper/lower limit value.

Creation screen for setting file



① Download	: Load the set file can change the setting contents. The menu of choosing file will indicated and the USB graduation of the set file will be saved.
② New file	: Finished the new set file, the type/unit setting menu will be indicated after choose the place to save set file.
③ File Name	: The name of the set file. Cannot change the name of set file.
④ Expression unit	: Load set file indicate the expression unit set by TNX.
⑤ Type	: Indicate the type of TNX to make set file.
⑥ Input test mode	: Choose test from open/close when operating TNX.
⑦ Input max torque of open	: Can choose 1st, 2nd, 3rd.
⑧ upper /lower limit	:Input upper /lower limit value to use the item of upper /lower limit value of open/close of max torque chosen by ⑦
⑨ Save	: Save the contents of changed set file into the file of ③ .

Model/Unit Setting



① Choose type : Choose type of mainframe.

② Choose expression unit : Use the expression unit of mainframe choose setting.

③ OK : Reflect the input value and return to Creation screen for setting file.

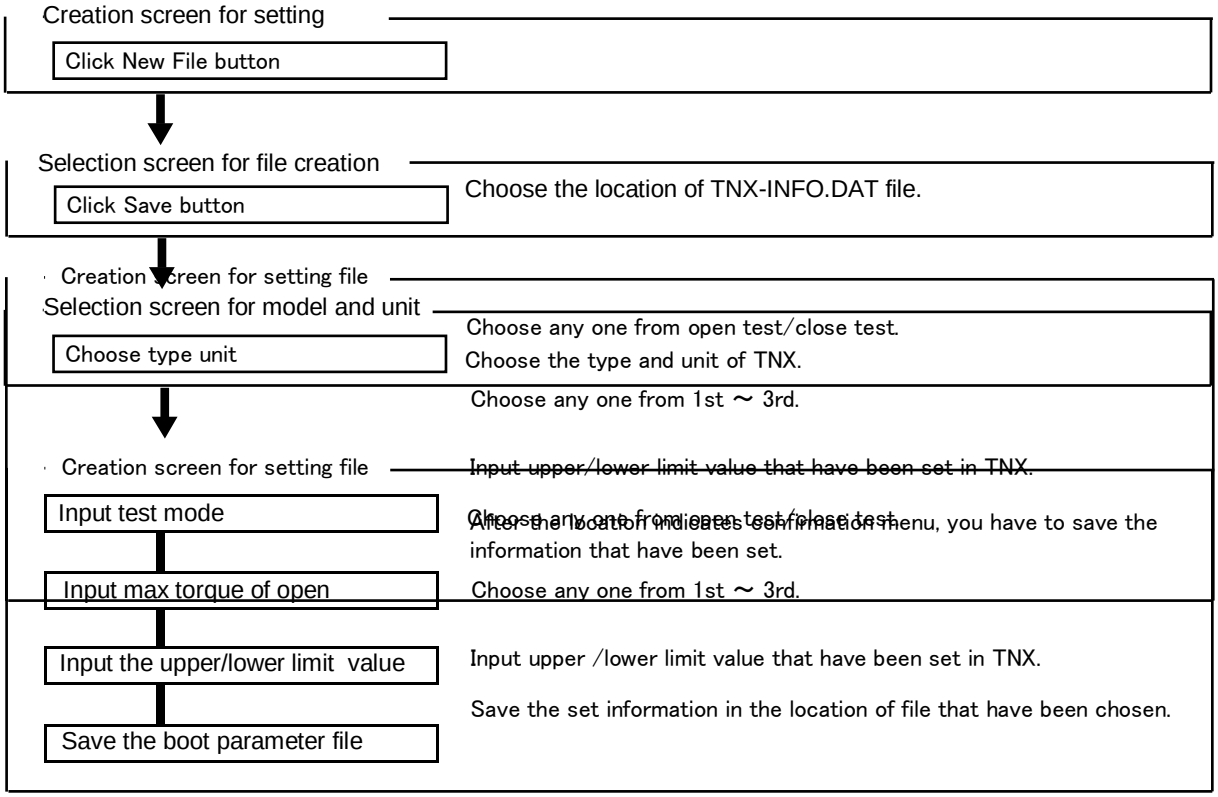
④ Cancel : Cancel the creation of a new setting file.

※ If the type of mainframe and the expression unit are different, you can't set the contents of file in TNX.

6.5.The Step of setting file

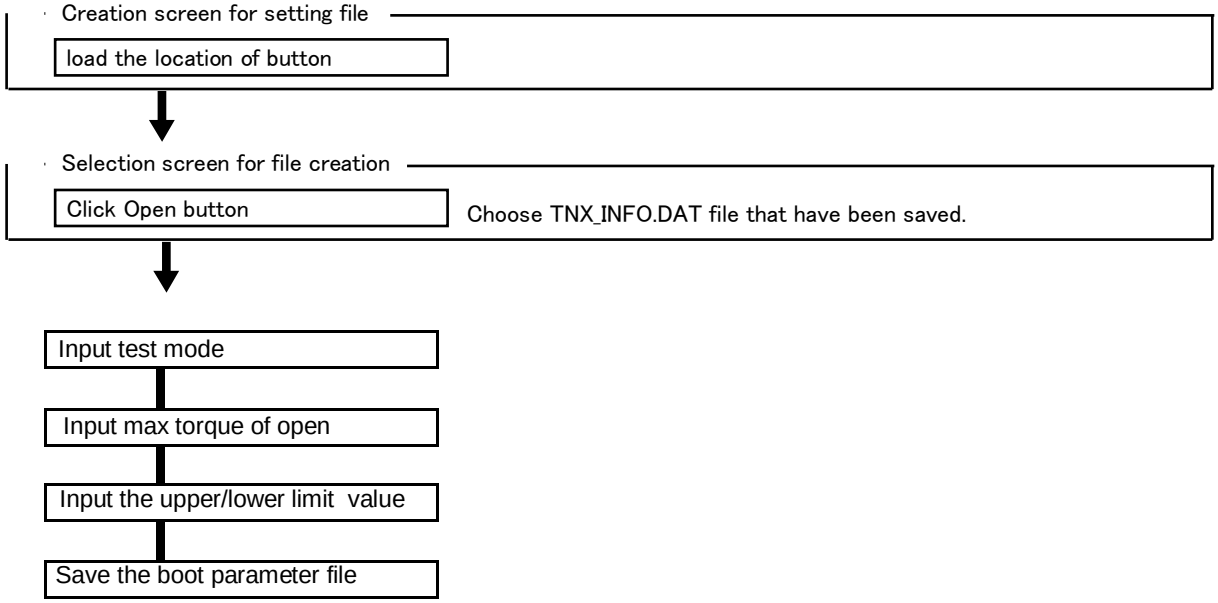
New setting file

Make new set file.

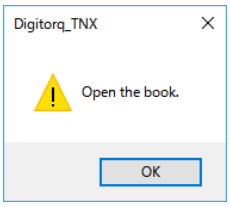
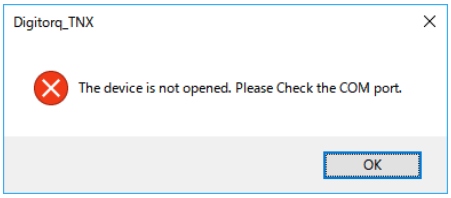
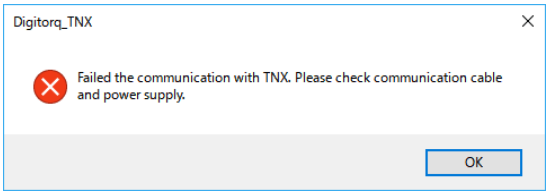
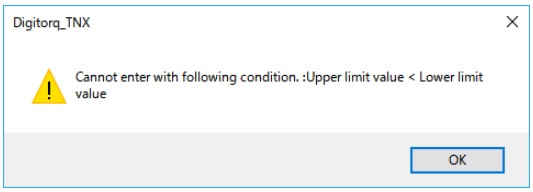
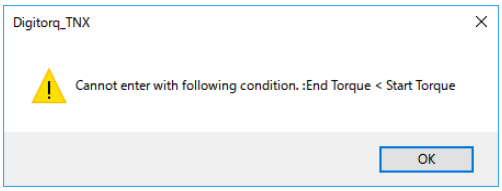
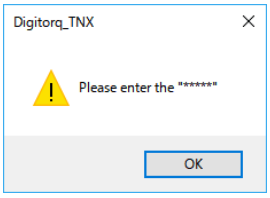
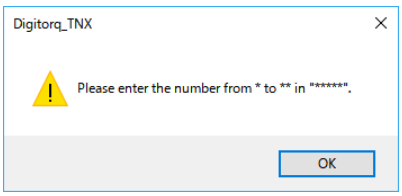
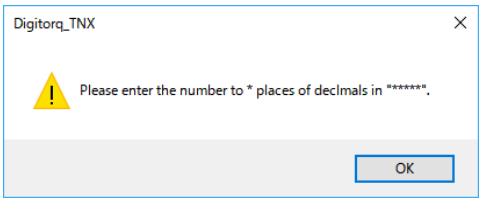


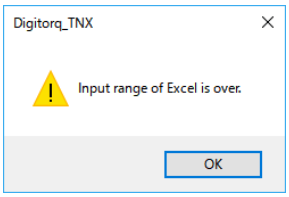
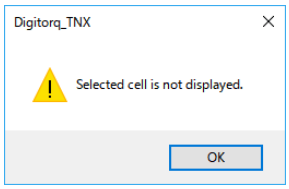
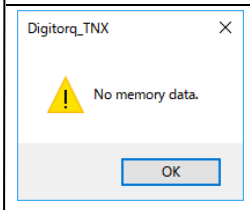
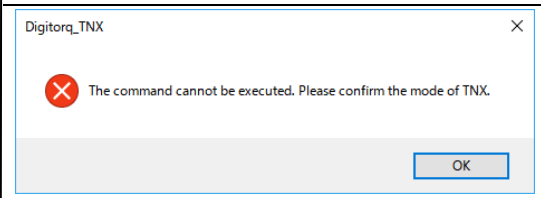
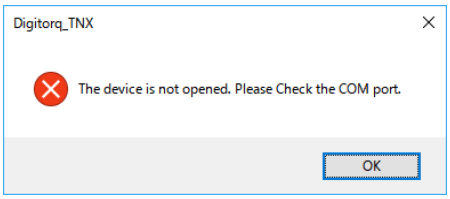
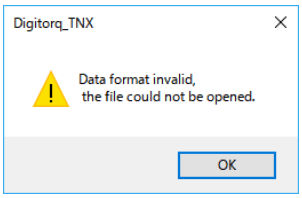
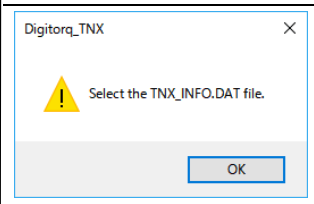
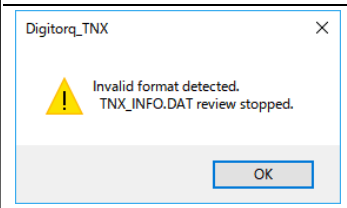
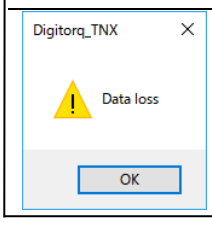
Change the setting file

Load the set file that have been saved, then change the set contents.



7.Main Error

Indicate mistake	Reason	Answer
	Start up <Digitorq_TNX>without opening work book	Please start up<Digitorq_TNX> after opening work book
	USB is not connected or the drive is not installed	Please confirm the connection of USB and whether the driver is correctly installed
	The power of TNX is off.	Please confirm whether the power of TNX is "ON"
	Input upper limit value< lower limit value, then click "ok" in menu of change input.	Please input upper limit value that bigger than lower limit value.
	Input value of which End Torque < Start Torque and click open/close save data.	Please input value of End Torque bigger than value of Start Torque.
	When the input items are blank click open/ close data button or the start button of Continuous data.	Please input value according to the message.
	Input the value which is out side of input range.	Please input value included in input range according to the message.
	Value input decimal point beyond range in each input item.	Input value included in range of decimal point, according to the message.

Indicate mistake	Reason	Answer
	Exceed the input range of inputing data in excel.	Choose other call or charge work book, input data in indicative range of excel.
	The cell chosen by"choose cell" is not indicative.	Choose cell than car be indicated again through "choose cell".
	When the coefficient of save data that have been landed and saved is0 chick cancel the last data button. When the number of save data that have been landed and saved is 0 click open /close memory data button	Please operate in case of landing and sawing date.
	The mainframe of TNX is mode except test mode. (function mode and so on)	Please set mainframe of TNX as test mode.
	When starting up Digitorq_TNX, a device except TNX is connected.	Please connect TNX
	Choose file of different with save data import by TNX.	Please choose saved data imported by TNX.
	Choose file except TNX-INFO DAT file	Choose TNX-INFO.DAT file.
	Choose file of different mode with TNX-INFO.DAT file.	Please choose TNX_INFO.DAT file made by digitorq_TNX.
	The PC performance is extremely low. Use the computer to operate other use. More the box when loading continuous value.	Suggest use computer of active environment. When starting up other software operate digitorq TNX after all is finished. Charge environment of loading distance.

※ 1 Suggest work environment: higher than CPU 3.2GHz, memory bigger than 4GB RAM.
※ 2 If happen when 100 times/sec, it will change to 50 times/sec to solve the problem.

8.Range of input

Model	Item	Upper limit value		Lower limit value		Class range	
		Nm/mNm	Ncm	Nm/mNm	Ncm	Nm/mNm	Ncm
TNX-0.5	Input range	0 ～500.0	0 ～50.00	0 ～500.0	0 ～50.00	0.1～500.0	0.01～50.00
	Initial value	※1	※1	※2	※2	0.1	0.1
	Digit below decimal point	1	2	1	2	1	2
TNX-2	Input range	0 ～ 2.000	0 ～ 200.0	0 ～ 2.000	0 ～ 200.0	0.001 ～ 2.000	0.1 ～ 200.0
	Initial value	※1	※1	※2	※2	0.1	10
	Digit below decimal point	3	1	3	1	3	1
TNX-5	Input range	0 ～ 5.000	0 ～ 500.0	0 ～ 5.000	0 ～ 500.0	0.001 ～ 5.000	0.1 ～ 500.0
	Initial value	※1	※1	※2	※2	0.25	25
	Digit below decimal point	3	1	3	1	3	1
TNX-10	Input range	0 ～ 10.00	0 ～ 1000	0 ～ 10.00	0 ～ 1000	0.01 ～ 10.00	1 ～ 1000
	Initial value	※1	※1	※2	※2	0.1	10
	Digit below decimal point	2	0	2	0	2	0
Model	Item	Start position		Stop position		Trigge	
		Nm/mNm	Ncm	Nm/mNm	Ncm	Nm/mNm	Ncm
TNX-0.5	Input range	0 ～500.0	0 ～50.00	0 ～500.0	0 ～50.00	0.1～500.0	0.01～50.00
	Initial value	0	0	500	50	0	0
	Digit below decimal point	1	2	1	2	1	2
TNX-2	Input range	0 ～ 2.000	0 ～ 200.0	0 ～ 2.000	0 ～ 200.0	0 ～ 2.000	0 ～ 200.0
	Initial value	0	0	2	200	0	0
	Digit below decimal point	3	1	3	1	3	1
TNX-5	Input range	0 ～ 5.000	0 ～ 500.0	0 ～ 5.000	0 ～ 500.0	0 ～ 5.000	0 ～ 500.0
	Initial value	0	0	5	500	0	0
	Digit below decimal point	3	1	3	1	3	1
TNX-10	Input range	0 ～ 10.00	0 ～ 1000	0 ～ 10.00	0 ～ 1000	0 ～ 10.00	0 ～ 1000
	Initial value	0	0	10	1000	0	0
	Digit below decimal point	2	0	2	0	2	0

※1 Initial value of upper limit value: upper limit value of TNX.

※2 Initial value of lower limit value: lower limit value of TNX.

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Nidec Shimpo Corporation change its company name to Nidec Drive Technology Corporation on April 1, 2023.