SHIMPO

TRC Series

Digitorq TRC Software

Operation Manual

Read manual thoroughly prior to operation.

Manufacturer reserves the right to change the contents of this manual without notice.

Contents

1 Software Overview

Thank you for choosing the TRC Digital Torque Checker; as an added feature the TRC can be operated with the free software called Digitorq_TRC.

What is Digitorq_TRC?
Digitorq_TRC is an Add-in tool for Microsoft Excel, allowing easy download and analysis of the data gathered during testing.

Read this operation manual carefully prior to use. It holds important information on how to properly install and use the Shimpo Digitorq_TRC Software.

For additional updates and support visit our website at
http://www.shimpoinst.com/software.php
or call Shimpo Instruments at 1-800-237-7079.

2 Software Requirements and Initial Information

The Digitorq_TRC is an add-in tool for Microsoft Excel 2003 or 2007.
This tool allows data to be collected and downloaded via USB cable, which in turn tabulates these data to useful information.

Software requirements

- Windows XP
- Microsoft Excel 2003 or 2007

Minimum System Requirements

- 256 MB of RAM
- Minimum of 1GHZ of Processing Speed
- USB Port 1.1 or higher

Important: It is recommended that you close all other programs prior to installation using the Digitorq_TRC Software at higher data transfer.

Software features:

- Download data stored in Peak memory mode.
- Download data in Continuous mode (real time).
- Read and set the upper/ lower limit for each comparator pattern number.
- Set print information

*Microsoft Excel is a registered trademark of the Microsoft Corp.

3 Reminders

CAUTION	Caution warning holds important safety information
	Reminder: holds important key information for the product.

CAUTION

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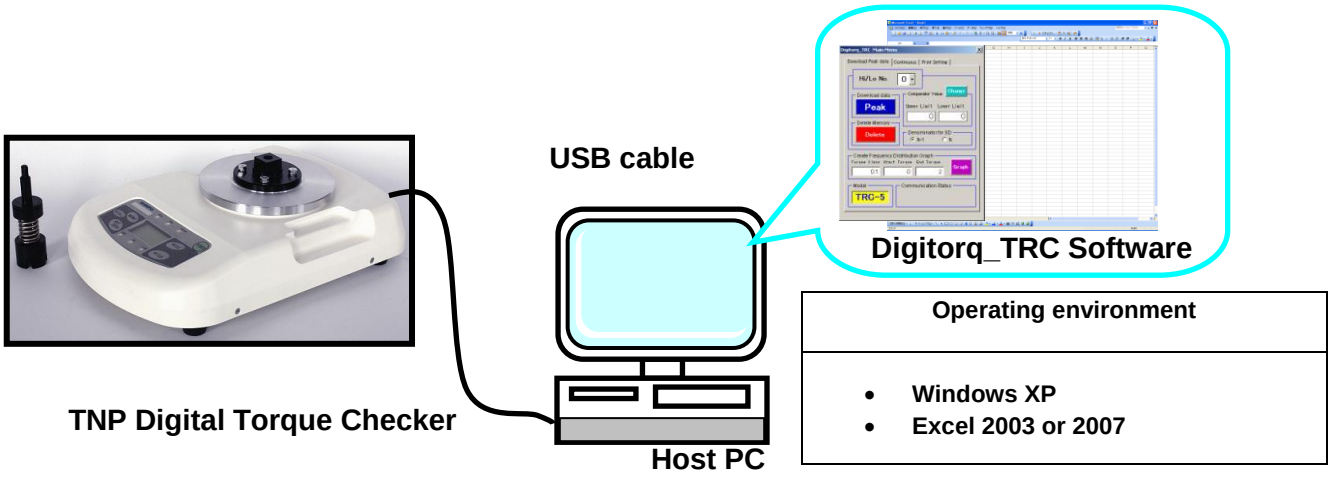
4 Set Up Procedure

What will you need to get started?

- A copy of the Digitorq_TRC software, this software can be downloaded from http://www.shimpoinst.com/software.php
- Visit this website for future and additional updates.
- USB A to USB B cable plugged in to an open port from the Host PC.
- USB port 1.1 or higher
- Microsoft Excel 2003 or 2007 (these versions includes the necessary libraries needed).



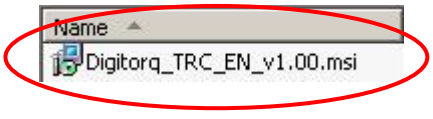
4.1 *Decompression of Downloaded File*

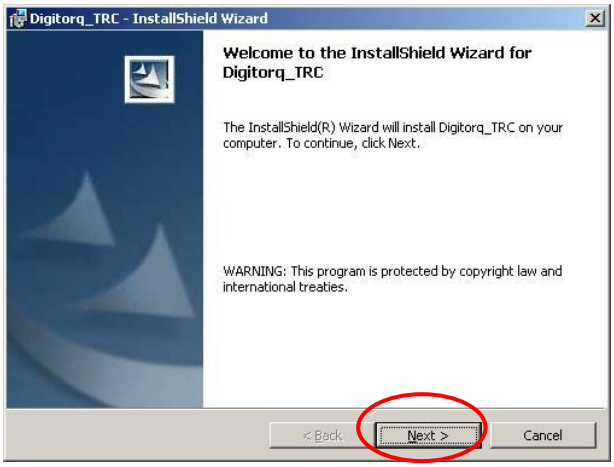
The zip program for Digitorq_TRC includes the following:

- Digitorq_TRC Windows application software (Digitorq_TRC_EN_v*.**.msi)
  This is Windows Installer Package.
  v*.** means version.
- Digitorq_TRC Manual.pdf
  This is the manual Digitorq_TRC.

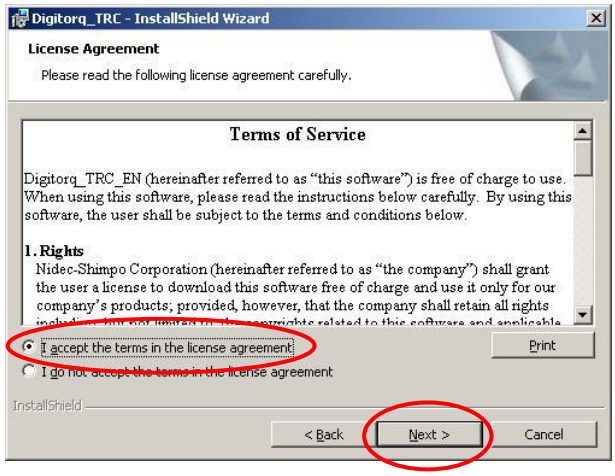
4.2 *Installation Procedure of Digitorq_TRC Application Software*

Double click the Digitorq_TRC_EN_v*.**.msi, Windows Installer is started.



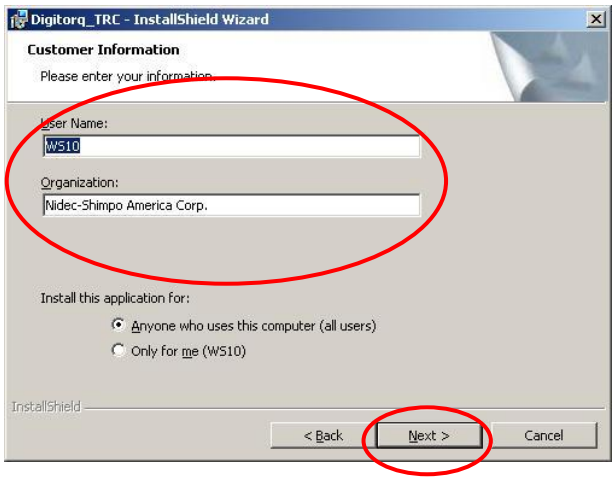


Click "Next >".

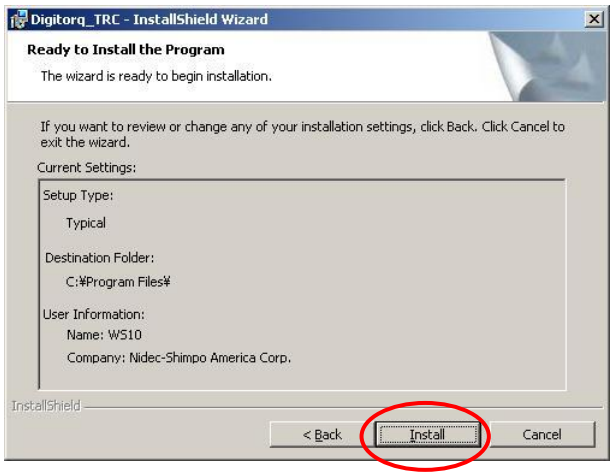


Read the Terms of Service.
If you agree, set the check button of "I accept……", next click "Next >".

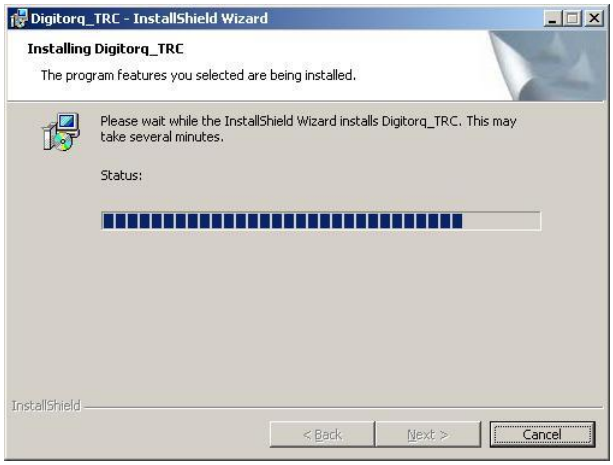
Next page



Fill in User Name and Organization.
Click “Next >”.



Confirm indicated items.
Click “Install”.

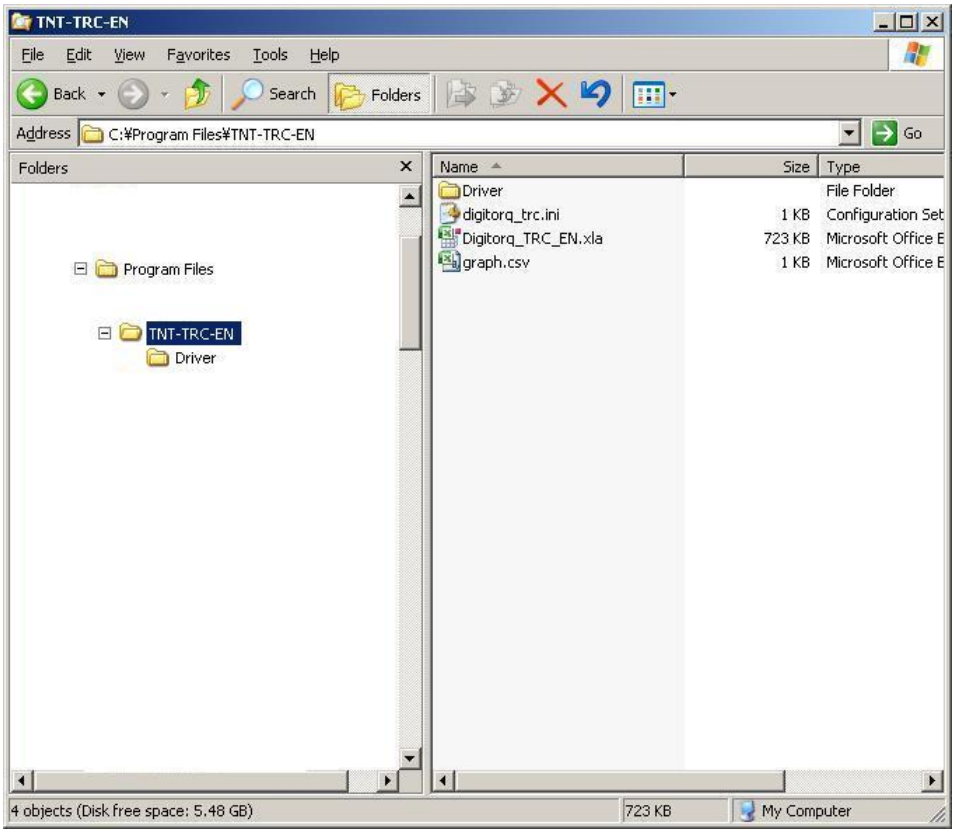


Start to install.

Next page

When complete to install, click "Finish".

After completing the installation, the folder of "c:\Program Files\TNT-TRC-EN" is made, and the files and folder are stored as shown in diagram below.



CAUTION

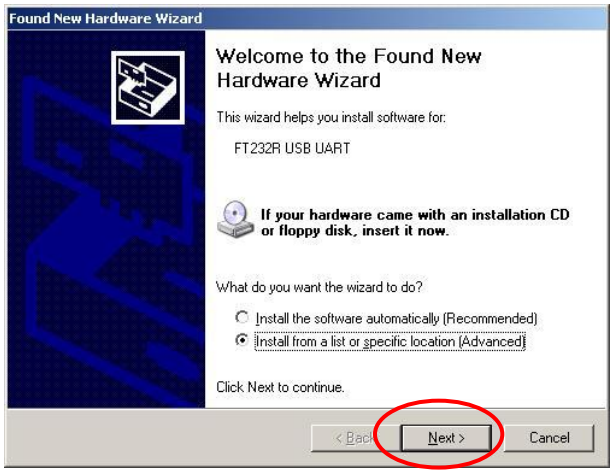
Do not change the content or move the Driver folder Digitorq_trc.ini and graph.csv. The Software might not operate properly.

4.3 Installation Procedure of USB Driver for Digitorq_TRC

Turn the TRC power on, the USB cable connects between TRC and your PC.
The message balloon of detecting new hardware is displayed in the lower right of your PC screen.
After that, the USB driver starts to install.

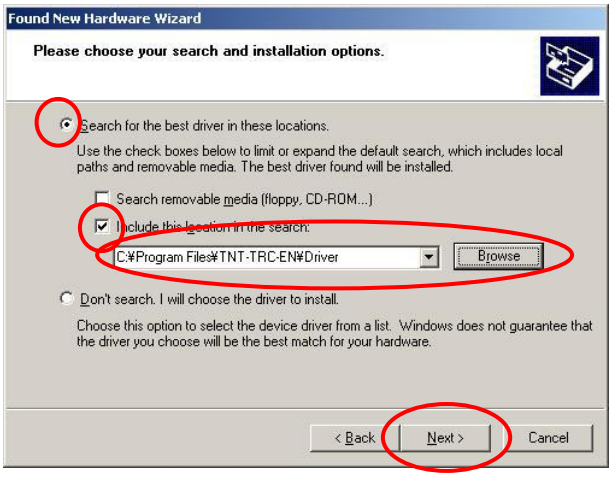
The USB driver should be installed after 4.2 Installation Procedure of Digitorq_TRC.

At 1st, Welcome to the Found New Hardware Wizard is displayed.

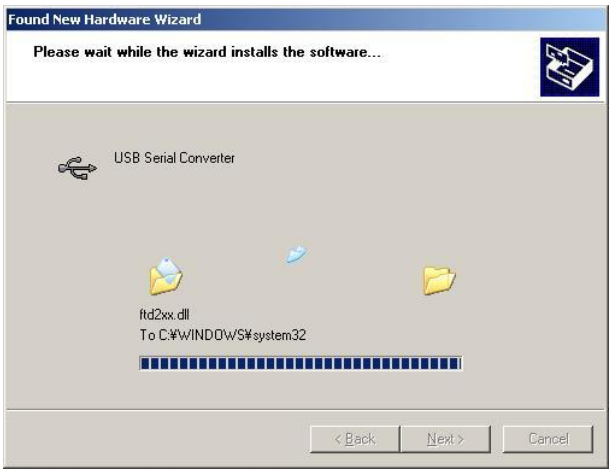


Set the check button of “Install from a list or specific location (Advanced). Click “Next >”.

Next page



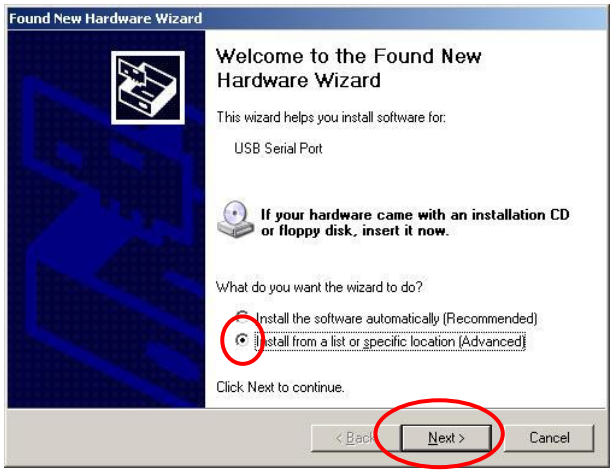
Set the check button of “Search for ….”, and set the check box of “Include …”.
Input “C:\Program Files\TNT-TRC-EN\Driver” using “Browse” button.
Click “Next >”.



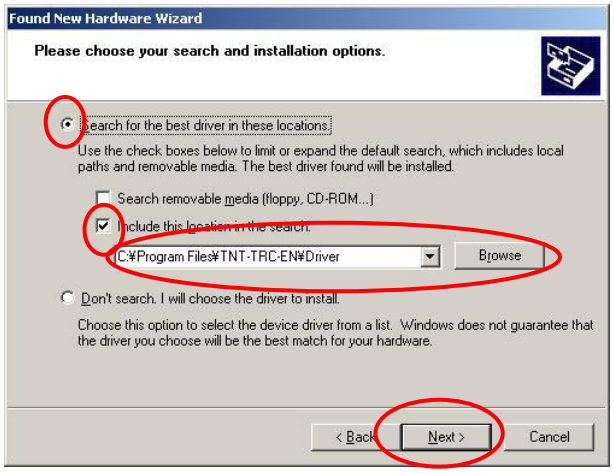
Installing USB driver.

Completing to install USB driver.
Click “Finish”.
Next step is the installation of USB serial port.

Next page



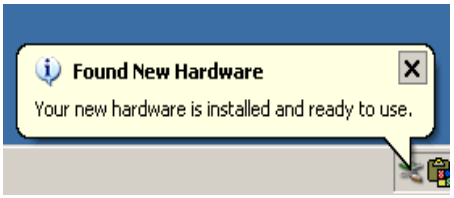
Set the check button of “Install from a list of specific ….”.
Click “Next >”.



(Operate same as previous procedure.)
Set the check button of “Search for ….”, and set the check box of “Include …”.
Input “C:\Program Files\TNT-TRC-EN\Driver” using “Browse” button.
Click “Next >”.

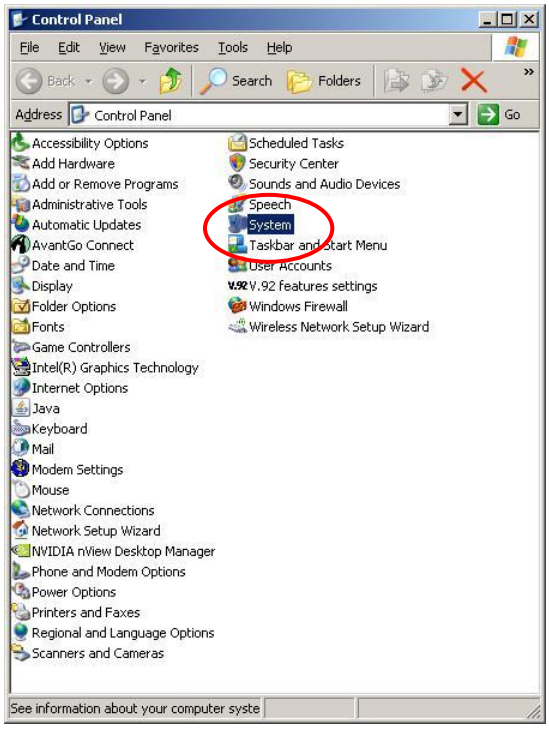
Completing to install USB serial port.
Click “Finish”.

Windows will confirm the presence of a new hardware (dialog box will appear on the lower part of the screen).
All installation is finished.

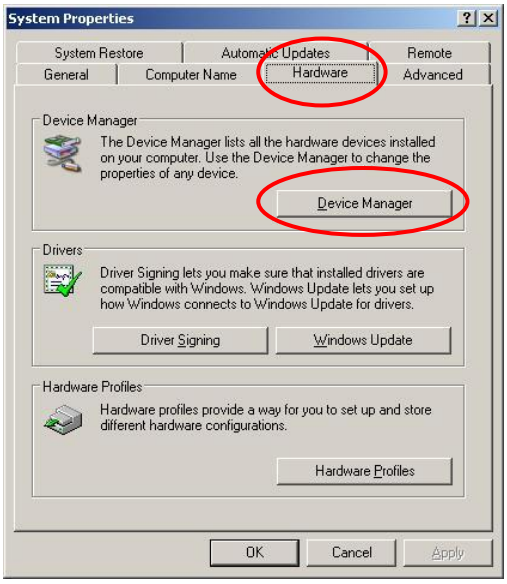


4.4 Confirmation of COM Port

After the installation (4.1, 4.2, 4.3), finally confirm the COM port or set COM port.

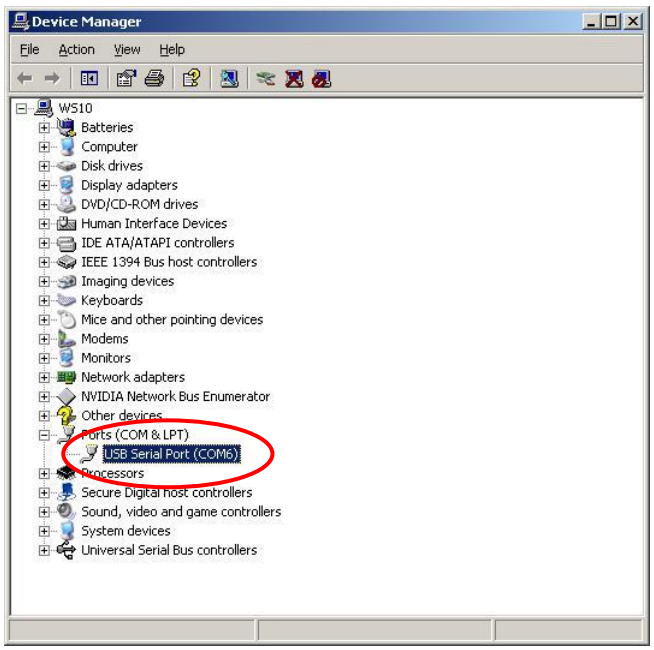


Open Control Panel.
Double click “System”.



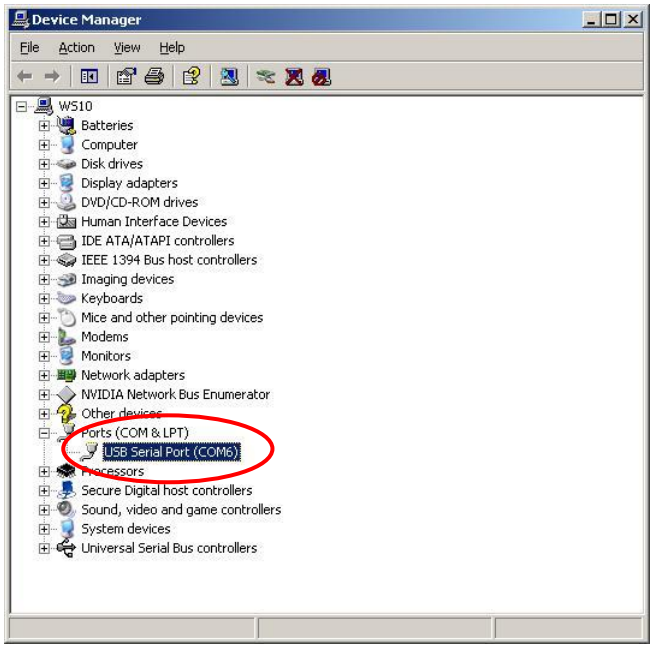
Select “Hardware” tab.
Click “Device Manager”.

Next page



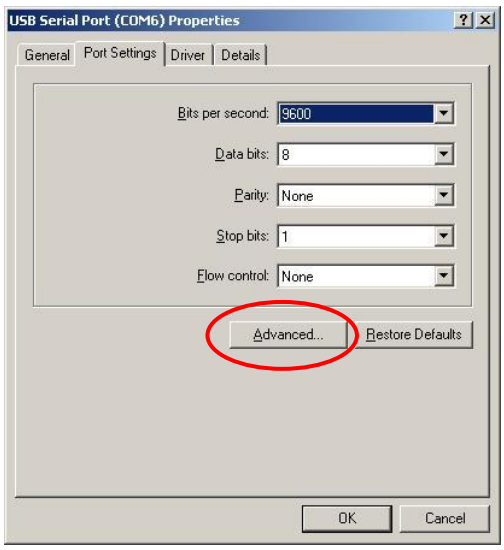
Select “Ports (GOM & LPT)”. Confirm COM port No. In this case, COM port No. is 6. Note: Important!! Remember the number.

If COM port No. is not from 1 to 15, it is necessary to search the empty port of 1 to 15 and change the COM port.

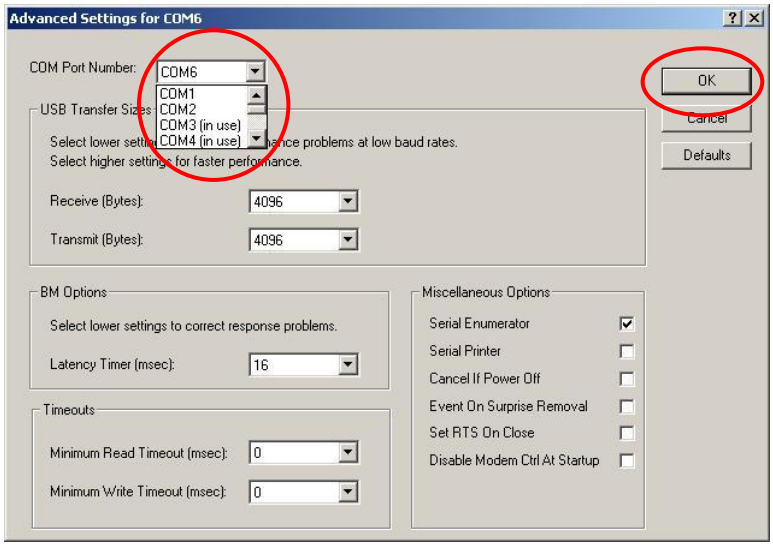


Go to “USB Serial Port (COM?)” by left mouse button.
Right click and click “Properties”.

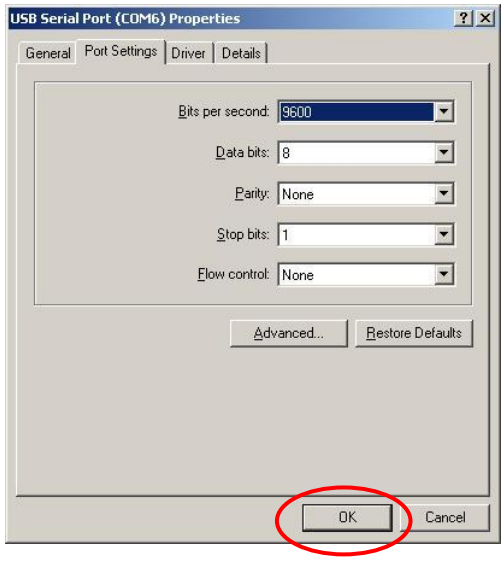
Next page



Select “Port Settings” tab.
Click “Advanced...”.



In the list box of “COM Port Number”, select a COM port without “[in use]” from COM1 to COM15.
Click “OK”.

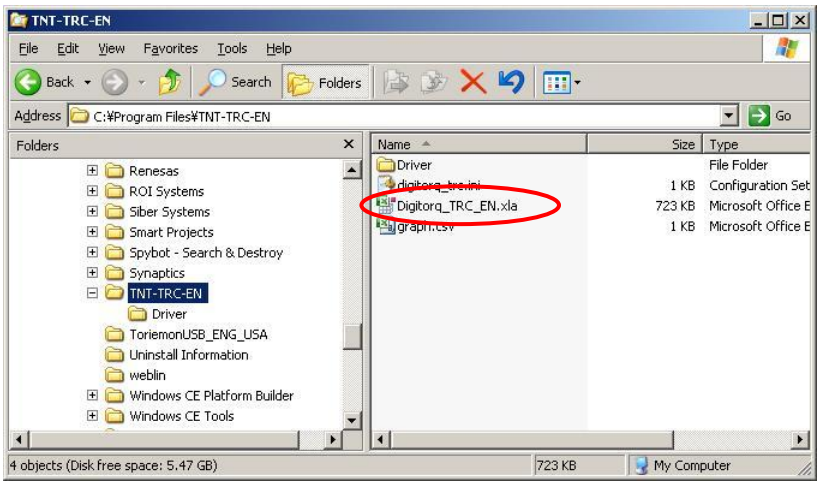


Click “OK”.
Exit Device Manager, System Properties and Control Panel.

5 Adding the Digitorq_TRC Software

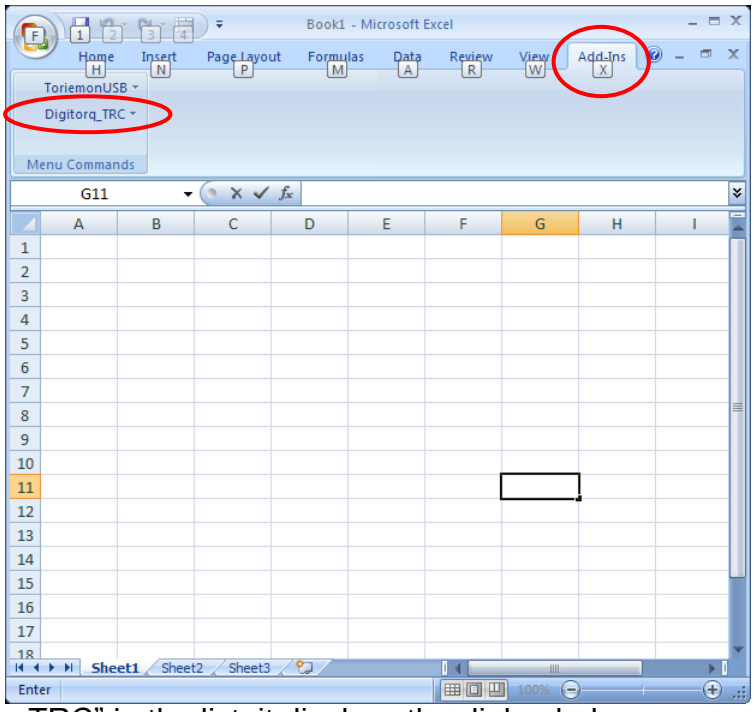
5.1 Startup

Double click “Digitorq_TRC_EN.xla” in the folder of “c:\Program Files\TNT-TRC-EN”.

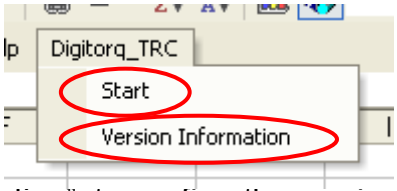


After starting the “Digitorq_TRC_EN.xla”, the screen below is displayed.
Click “Enable Macros”, Digitorq_TRC will be added at Excel menu bar.

Turn on the TRC, and then open a new book. Select “Add-Ins” tab, then the list of Add-Ins applications is indicated.
Confirm “Digitorq_TRC” in the list.



Select “Digitorq_TRC” in the list, it displays the dialog below.

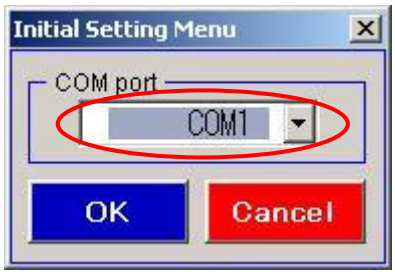


Click on “Version Information”, to confirm the version of the software.

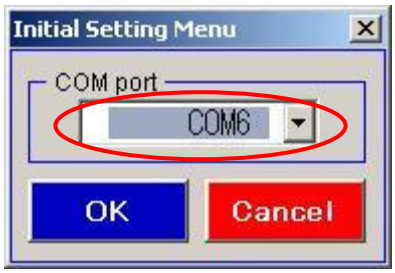
Click on “Start”, the software will startup.

5.2 Initial Dialog

When the software starts normally, the initial screen will appear at first.



Select the COM port number in the list box. It should select the number which is confirmed or set at Section 4.4 Confirmation of COM port.



: Go to Main Window.

: Exit the Digitorq_TRC.

Click on “OK”, if there is a problem of communication between your PC and TRC, it will be indicated below:

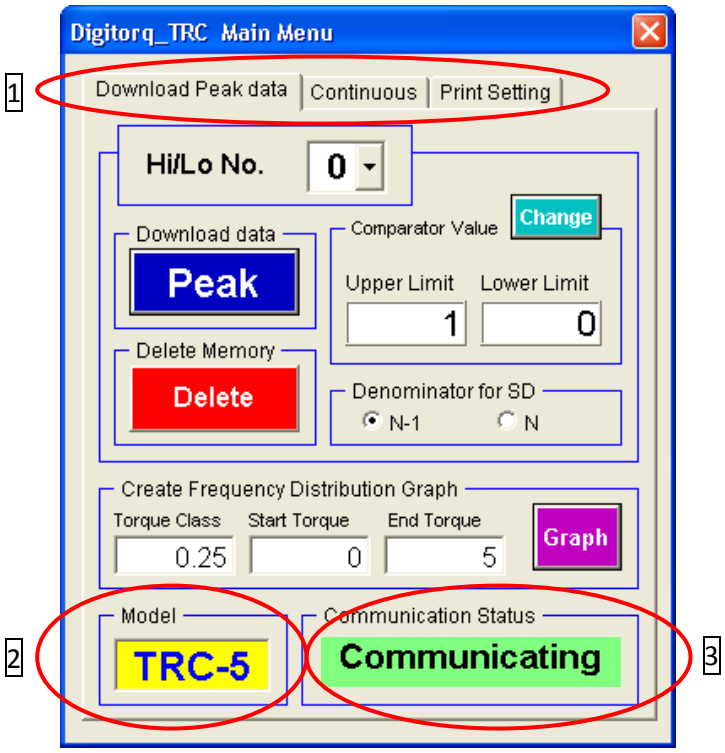
It might mismatch the COM port number, or PC is not connected with TRC.

TRC might turn off. Or other than those above errors happen, a problem might be at the installation, try to re-install.

6 Digitorq_TRC Software

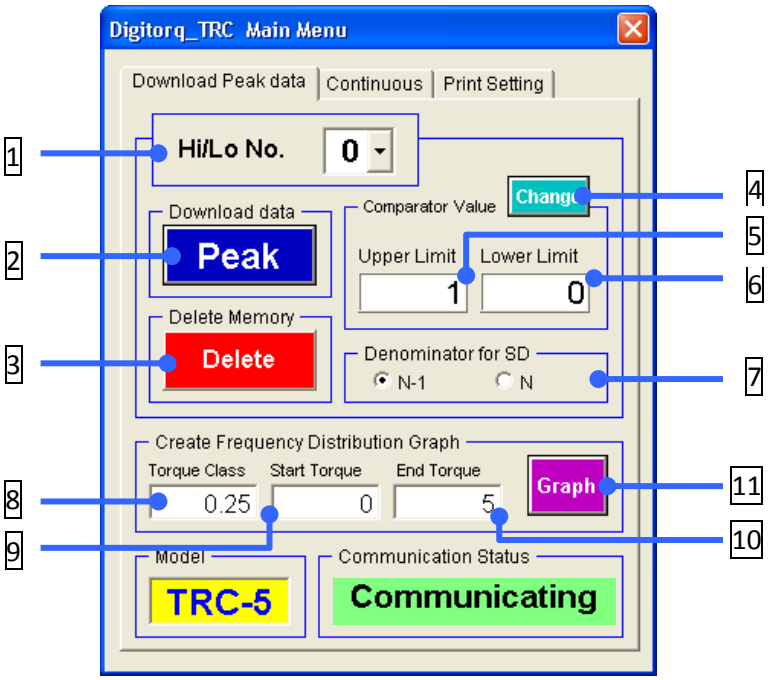
6.1 Main Window

After the Digitorq_TRC starts, the main window is displayed below.



1	Mode tab	Select “Download Peak data”, “Continuous” and “Print Setting”. Explain details from next chapter.
2	Model	Model of your TRC
3	Status	Current status of communication between PC and your TRC

6.2 *Download Peak Data Window*



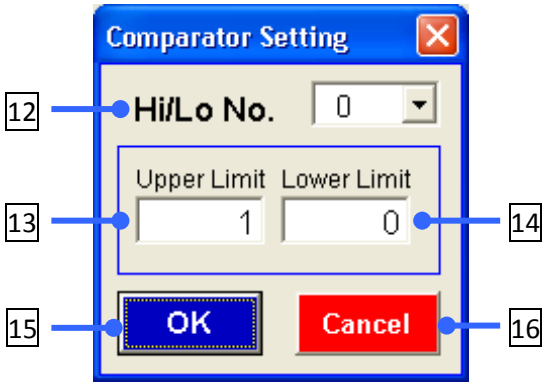
1	Hi/Lo No.	Select the pattern number from 0 to 9 (10 patterns) Refer to 4.2 Upper/Lower Limit Setting for Comparator of the TRC Operation Manual.
2	Peak	Peak memory data of selected “Hi/Lo No.” is put into cell of spreadsheet.
3	Delete	Clear the peak memory data of selected “Hi/Lo No.”. After click “Delete”, the confirmation dialog is appeared. Click “Yes” then the memory data is deleted.
4	Change	Open the comparator value dialog setting.
5	Upper Limit	Display the upper limit value of selected “Hi/Lo No.”.
6	Lower Limit	Display the lower limit value of selected “Hi/Lo No.”.
7	Denomination of SD	Check button of the denomination for Standard Deviation. Selectable “N” or “N-1”.
8	Torque Class	Input the Class Interval of Frequency Distribution. (*1)
9	Start Torque	Input the minimum torque for Frequency Distribution graph.
10	End Torque	Input the maximum torque for Frequency Distribution graph. (*1)
11	Graph	Make the Frequency Distribution graph. (*2)

(*1) Regarding the default value of Torque Class/End Torque, it depends on the TRC model and unit which previous graph was made.

(*2) If the model of TRC and unit is different from previous graph, the Torque Class and Start/End Torque will be initialized. Click the graph button again, making the graph.

6.2.1 Comparator Setting Window

Input the upper/ lower limit value for judgment.
If upper/ lower limit is set “0” both, the comparator function is deactivated.



12	Hi/Lo No.	Select the pattern number from 0 to 9 (10 patterns) Refer to 4.2 Upper/Lower Limit Setting for Comparator function of the TRC Operation Manual.
13	Upper Limit	Input the upper limit value of selected “Hi/Lo No.”. (*1)
14	Lower Limit	Input the lower limit value of selected “Hi/Lo No.”. (*1)
15	OK	Setting upper/lower limit value is sent to TRC, then return to Download Peak Data Window. (*2)
16	Cancel	Return to Download Peak Data Window without setting data.

(*1) Setting data should be from 0 to torque rating of your TRC.
Digit after decimal point is based on the display of your connected TRC. Refer to 8. Input the Range value.
The lower limit value should be less than the upper limit value.
The setting value should be absolute data, because the comparator function is used to absolute torque data. The “-“ key ignores.

(*2) When complete, all changes are sent to the TRC. The upper and lower limit values of the selected Hi/Lo No. are reflected.

6.2.2 Spreadsheet Format for Download Peak Data

After clicking on the Peak button, a new sheet is created every time. Next, download the memory data to the spreadsheet shown below.

Download the Peak data

	A	B	
1	Download the Peak data		1
2			
3	Hi/Lo No.	0	2
4	Date	7/29/2008	3
5	Time	11:36:30 AM	4
6	Prepared by		5
7	Remarks		6
8			
9	Temperature		7
10	Humidity(%)		8
11			
12	Model	TRC-5	9
13	Unit	Nm	10
14			
15	Number of Data	4	11
16	Maximum	0.837	12
17	Minimum	0.032	13
18	Average	0.335	14
19	Standard Deviation	0.3655	15
20	Denominator for SD	N-1	16
21	Variability	327.36	17
22			
23	Upper Limit	1	18
24	Lower Limit	0	19
25			
26	Number of High NG	0	20
27	Number of Low NG	0	21
28	Defective rate(%)	0	22

	23	24	25
38	Memory Number	Result	Torque (Nm)
39	1	O	0.032
40	2	O	0.837
41	3	O	0.099

1	Type of Data	“Download the Peak data”
2	Hi/Lo No.	Selected Hi/Lo No. (number)
3	Date	Date of test
4	Time	Time of test
5	Prepared by	Option input tester’s name
6	Remarks	Option input some comments
7	Temperature	Option input temperature at test
8	Humidity (%)	Option input humidity at test
9	Model	TRC model
10	Unit	Unit of torque at test
11	Number of data	The number of downloaded peak data
12	Maximum	Maximum data
13	Minimum	Minimum data
14	Average	Average value
15	Standard Deviation	Standard deviation value (*1)
16	Denominator of SD	Denominator type of Standard Deviation
17	Variability	Variability value (*1)
18	Upper Limit	Upper limit value
19	Lower Limit	Lower limit value
20	Number of High NG	Number of NG over upper limit (*1)
21	Number of Low NG	Number of NG under lower limit (*1)
22	Defective rate (%)	Rate of NG (*1)
23	Memory Number	Memory number of downloaded data
24	Result	Judgment result of peak data
25	Torque	Peak torque of downloaded data

(*1) Method of calculation:
Refer to 6.2.3 Calculation of Statistical Data.

The sheet of spreadsheet is named automatically as below.

Sheet name :TRC 0 - 1

Hi/Lo No.(0 – 9)

Sequence number (1-255)

6.2.3 Calculation of Statistical Data

Standard Deviation

The denomination for Standard Deviation is selectable “N” or “N-1”.

The numerical formulas are as follow respectively.

N-1

$$s = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}\left(x_i - \overline{x}\right)^2}$$

N

$$s = \sqrt{\frac{1}{N}\sum_{i=1}^{N}\left(x_i - \overline{x}\right)^2}$$

Conditions

s	Standard Deviation
$\overline{x} = \frac{1}{N}\sum_{i=1}^{N} x_i$	Average
x_i	Measuring peak data
N	Number of peak data

Variability

The numerical formula is as follow.

$$v = \left(\frac{3 \times s}{\overline{x}}\right) \times 100 \quad [\%]$$

Conditions

v	Variability [%]
s	Standard Deviation
$\overline{x}$	Average

Number of High NG/Low NG and Defective rate

High NG: Number of measuring peak data over upper limit value

Low NG: Number of measuring peak data under lower limit value

Defective Rate [%]

$$d = \frac{(\text{High NG}) + (\text{Low NG})}{N} \times 100 \quad [\%]$$

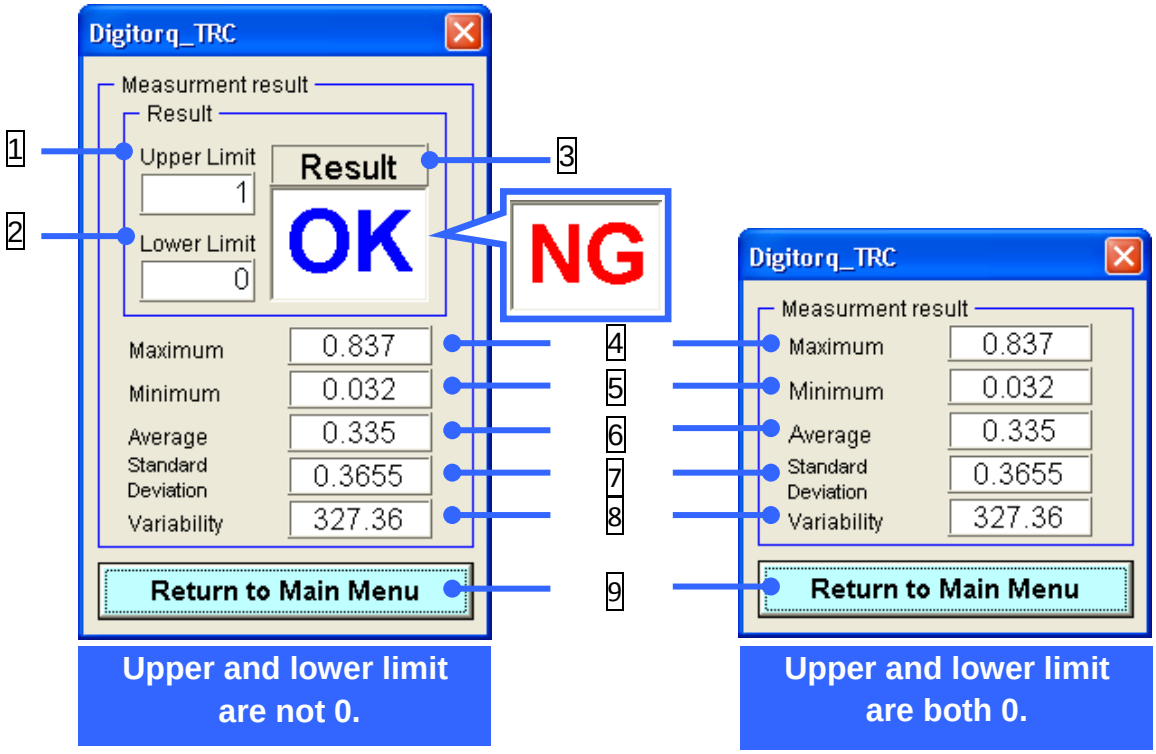
Conditions

d	Defective Rate [%]
N	Number of peak data

If upper/ lower limit is set “0” both, these data are not displayed.

6.2.4 Completing Download Window

After downloading the peak data, the window below appears.
Left window: The comparator function is ON.
Right window: The comparator function is OFF.



1	Upper Limit	Upper limit value
2	Lowe Limit	Lower limit value
3	Result	The result of comparator function. If all downloaded peak data are between upper and lower limit (including equal), the result is “OK”. (*1)
4	Maximum	Maximum value of all downloaded peak data
5	Minimum	Minimum value of all downloaded peak data
6	Average	Average value of all downloaded peak data
7	Standard Deviation	Standard Deviation value of all downloaded peak data
8	Variability	Variability value of all downloaded peak data
9	Return to Main Menu	If click the button, return to Download Peak Data Window

(*1) OK: $(\text{Lower Limit Value}) \le |(\text{All downloaded peak data})| \le (\text{Upper Limit Value})$

NG: $(\text{Lower Limit Value}) > |(\text{One or more of downloaded peak data})|$ or

$(\text{Upper Limit Value}) < |(\text{One or more of downloaded peak data})|$

6.2.5 Frequency Distribution Graph

After downloading the peak data, click on the Graph button, the Frequency Distribution graph is created in the same sheet.

Graph Contents

X axis: Class Interval of torque

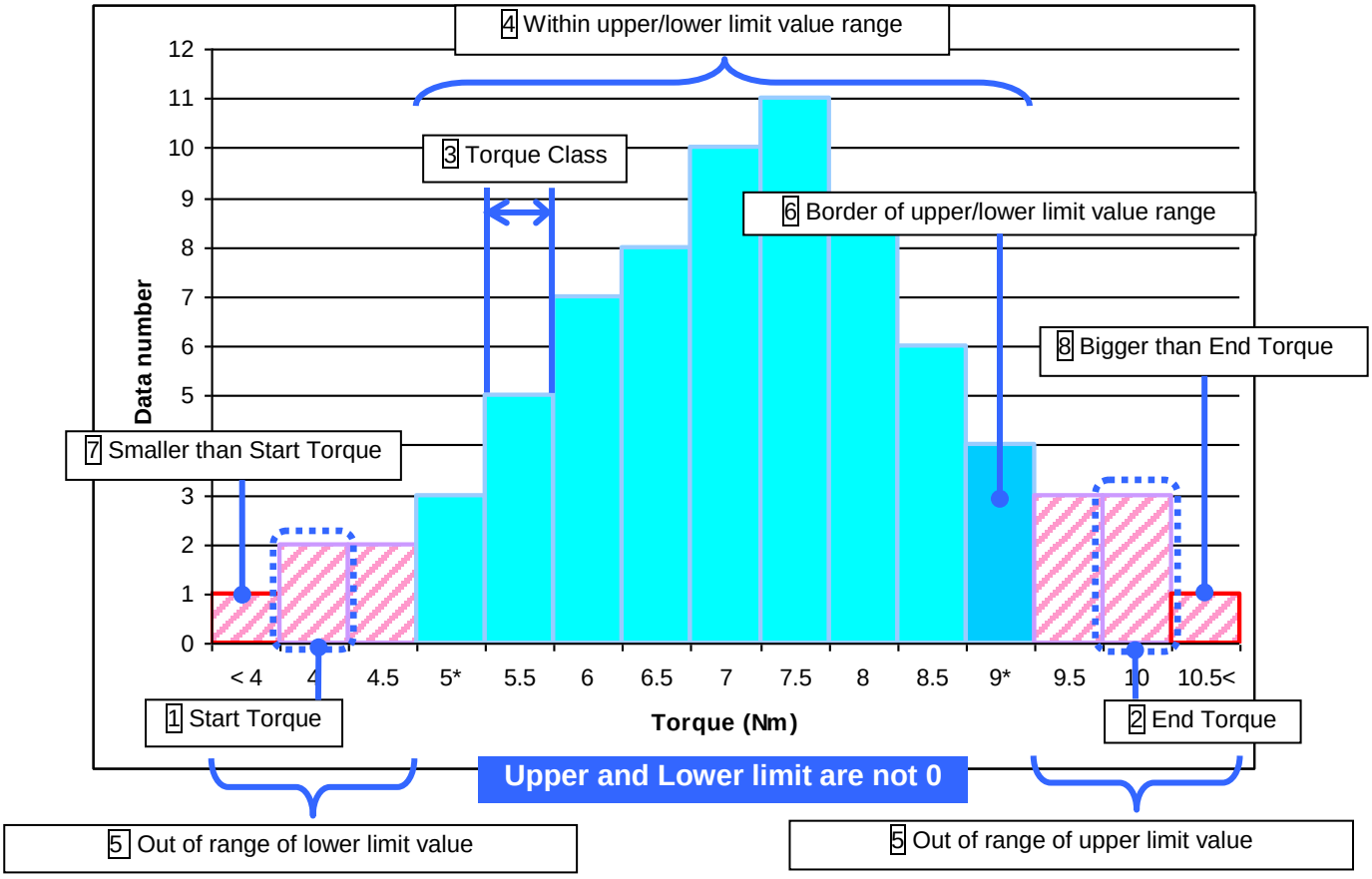
Y axis: Number of data

The Width of Class Interval (Torque Class), Start position (Start Torque) and Finish position (End Torque) are the values which are inputted at the Main Window.

The Division number is automatically decided from width of Class Interval, Start position, and Finish position.

Graph Format (Comparator Function is ON)

In case of comparator function is ON (both upper/ lower limit value are not 0), the following graph is shown.



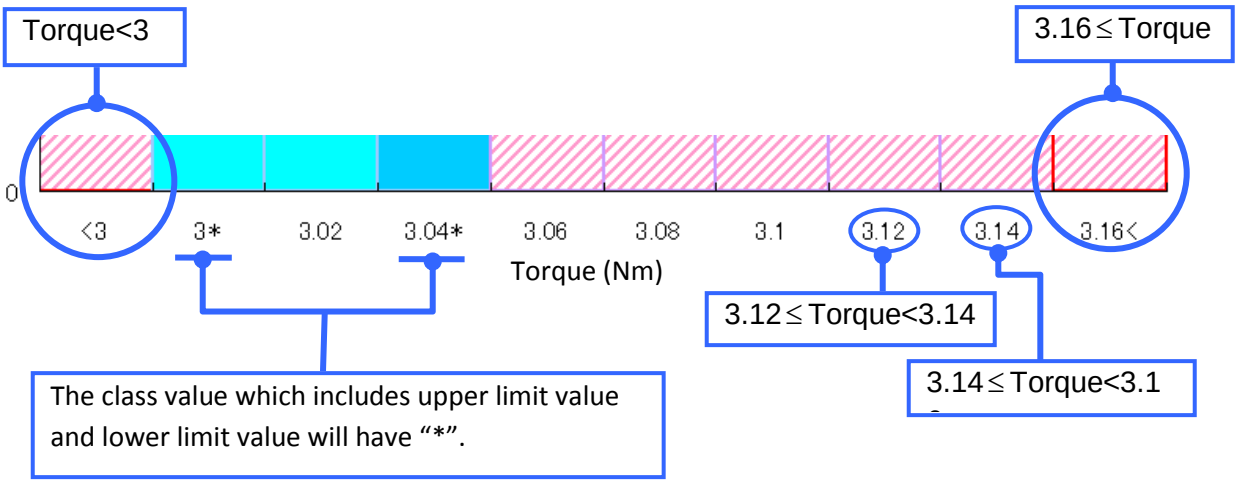
4	OK	The class bar which is within the upper/lower limit value is shown in light blue.
5	NG	The class bar which is out of range of upper/lower limit value is shown in hatched pink.
6	Border	If torque data which is out range of upper/lower limit is existing at a class which include upper/lower limit, the class bar is shown in blue.

Display of class value is as follows.

Range of each class is $(\text{Torque Class}) \leq (\text{Torque Value}) < (\text{Right Side Torque Class})$, and torque value of memory data which is suitable for its range is distributed at its class.

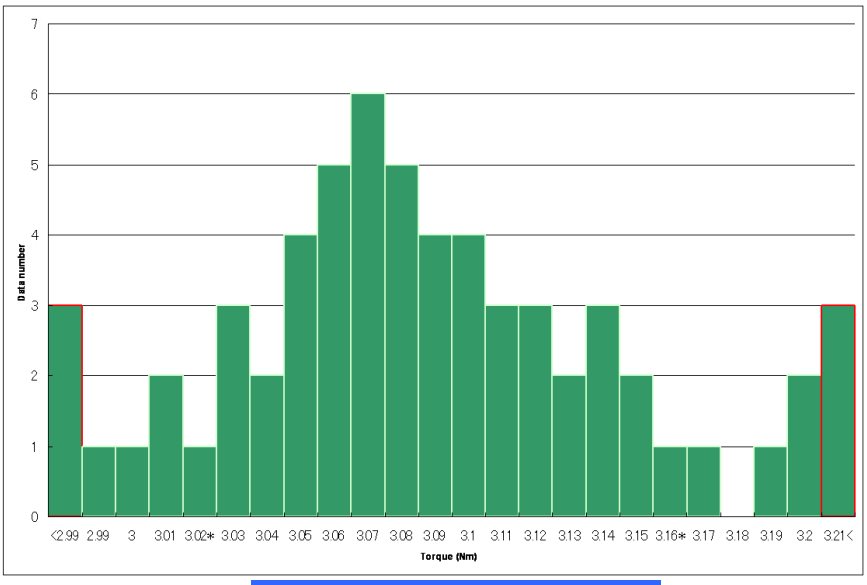
7 is $(\text{Torque Value}) < (\text{Start Torque})$.

8 is $(\text{class value which include End Torque} + \text{Torque Class}) \leq (\text{Torque Value})$.



Graph Format (Comparator Function is OFF)

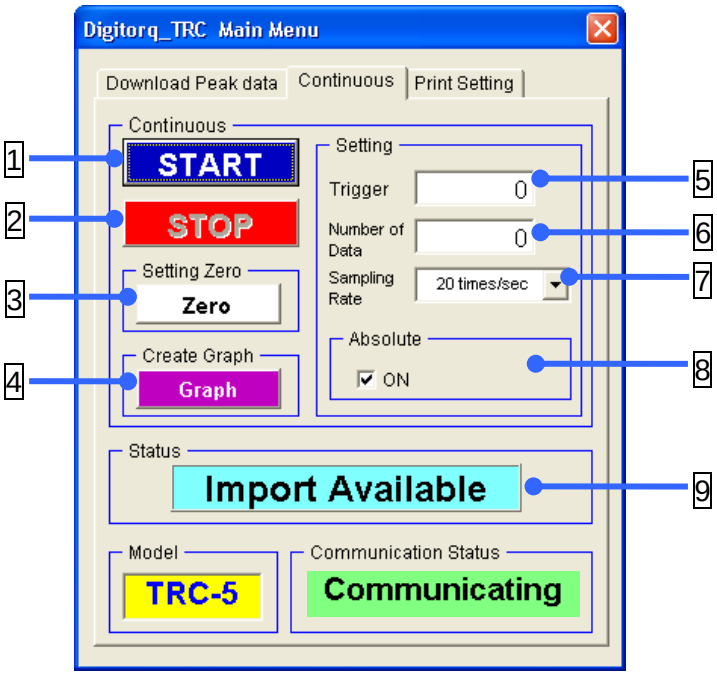
In the case of comparator function being OFF (both upper/ lower limit value are 0), the color does not change at each class, the graph is as follows.



Upper/lower limit are 0

6.3 *Continuous Window (Mean)*

At the Continuous mode, the measured torque can be downloaded into the spreadsheet in real time.



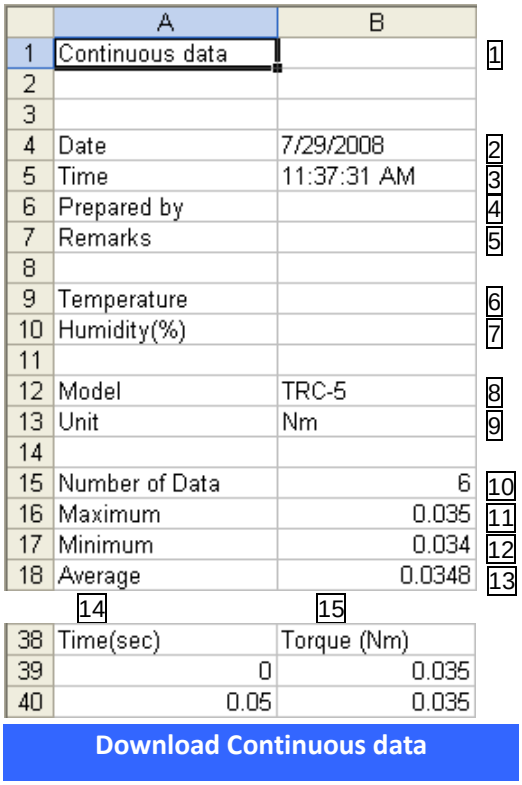
1	Start	Start to download torque data continuously.
2	Stop	Stop to download torque data.
3	Zero	Reset the measuring data on TRC.
4	Graph	Make a graph of downloaded real time torque data
5	Trigger	Input a trigger torque value to begin date download. When $(Triger) \leq \lvert Torque \rvert$, download starts immediately. If Trigger value is 0, the trigger function is disabled.
6	Number of Data	Specify the number of downloaded data from 0 to 32000 which are collected in the spreadsheet. When the Number of Data is 0, it means the same as 32000.
7	Data Sampling Rate	Select an interval of download in the list box, 20times/sec, 50times/sec, 100times/sec.
8	Absolute	Check the box, the graph is displayed with absolute. Do not check the box; the graph is shown with sign.
9	Status	The text box is displayed current status. (*1)

(*1) The status is as follows.

Import Available	Continuous data downloading available
Waiting	Waiting the trigger
Sampling	Downloading of continuous data
Complete	Finished downloading one continuous data
Can't Import	Download is not available due to communication error

6.3.1 Spreadsheet Format for Continuous

Clicking on the Start button makes a new sheet every time. Then download thevcontinuous data to the spreadsheet as shown below.



	A	B	
1	Continuous data		1
2			
3			
4	Date	7/29/2008	2
5	Time	11:37:31 AM	3
6	Prepared by		4
7	Remarks		5
8			
9	Temperature		6
10	Humidity(%)		7
11			
12	Model	TRC-5	8
13	Unit	Nm	9
14			
15	Number of Data	6	10
16	Maximum	0.035	11
17	Minimum	0.034	12
18	Average	0.0348	13
	14	15	
38	Time(sec)	Torque (Nm)	
39	0	0.035	
40	0.05	0.035	

Download Continuous data

1	Continuous Data	“Continuous” mode
2	Date	Date of test
3	Time	Time of test
4	Prepared by	Option input tester’s name
5	Remarks	Option input some comments
6	Temperature	Option input temperature at test
7	Humidity (%)	Option input humidity at test
8	Model	TRC model
9	Unit	Unit of torque at test
10	Number of data	The number of downloaded peak data
11	Maximum	Maximum data
12	Minimum	Minimum data
13	Average	Average value
14	Time(sec)	Elapsed time since downloading started
15	Torque	Downloaded torque data

The spreadsheet is named automatically as below.

Sheet name: TRC - 1

Sequence number (1-255)

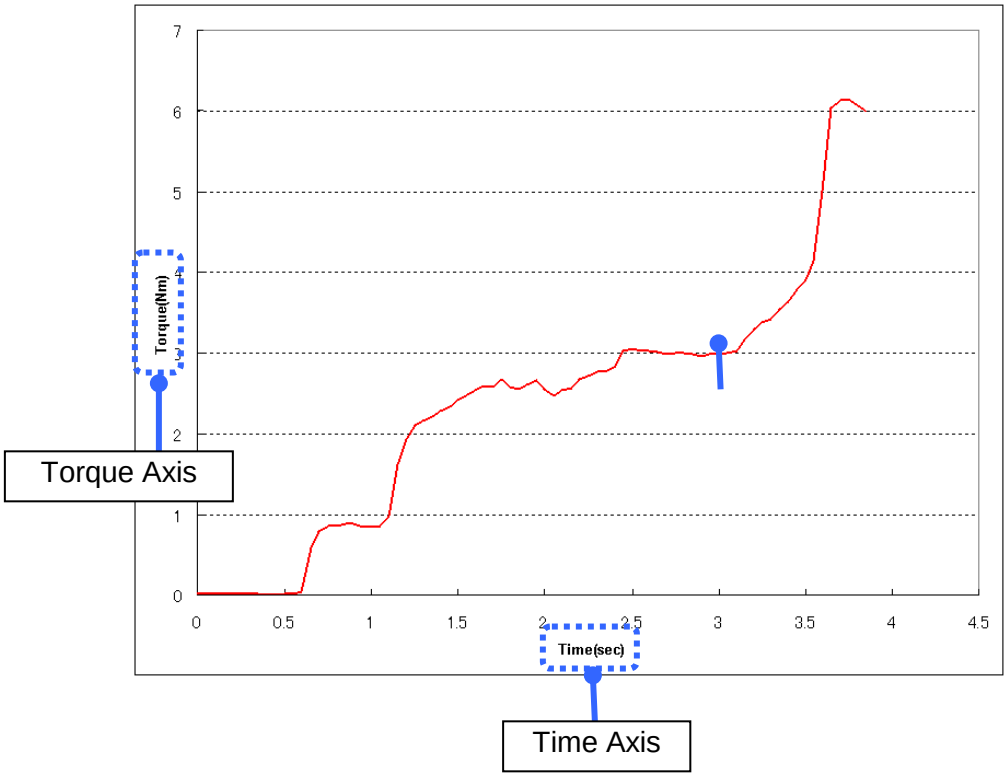
6.3.2 Completing Download Window

Clicking on the Stop button or when reaching the number of data, the window below appears.

Clicking on the “Return to Main Menu” button returns you to the Continuous Window.

6.3.3 Graph for Continuous

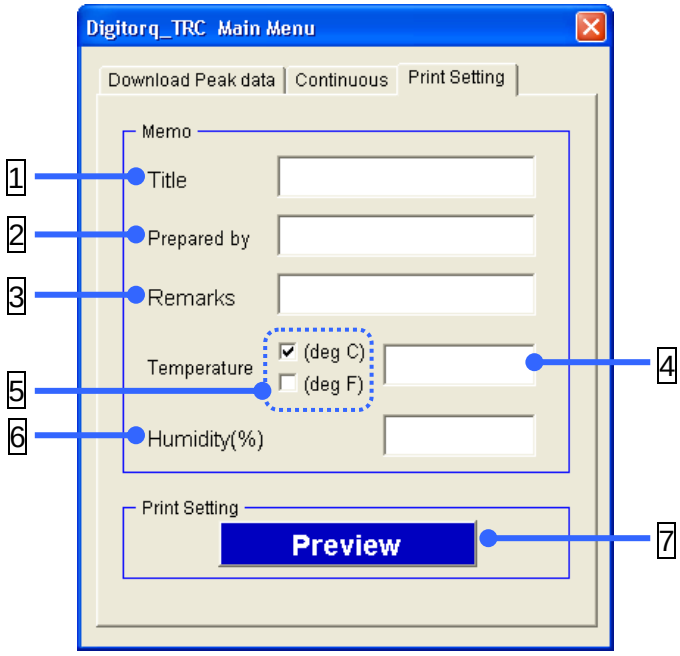
After downloading of the continuous data, click on the Graph button, the graph is made in the same sheet.



Time Axis: Approximate elapsed time since the start of continuous data downloading.

6.4 *Print Setting Window*

At the Print Setting mode, it is available to make one sheet of the graph. Below items will be transferred into the spreadsheet, and printing preview is shown.
This print setting is only available with the graph which is created at Download Peak Data mode and Continuous mode.

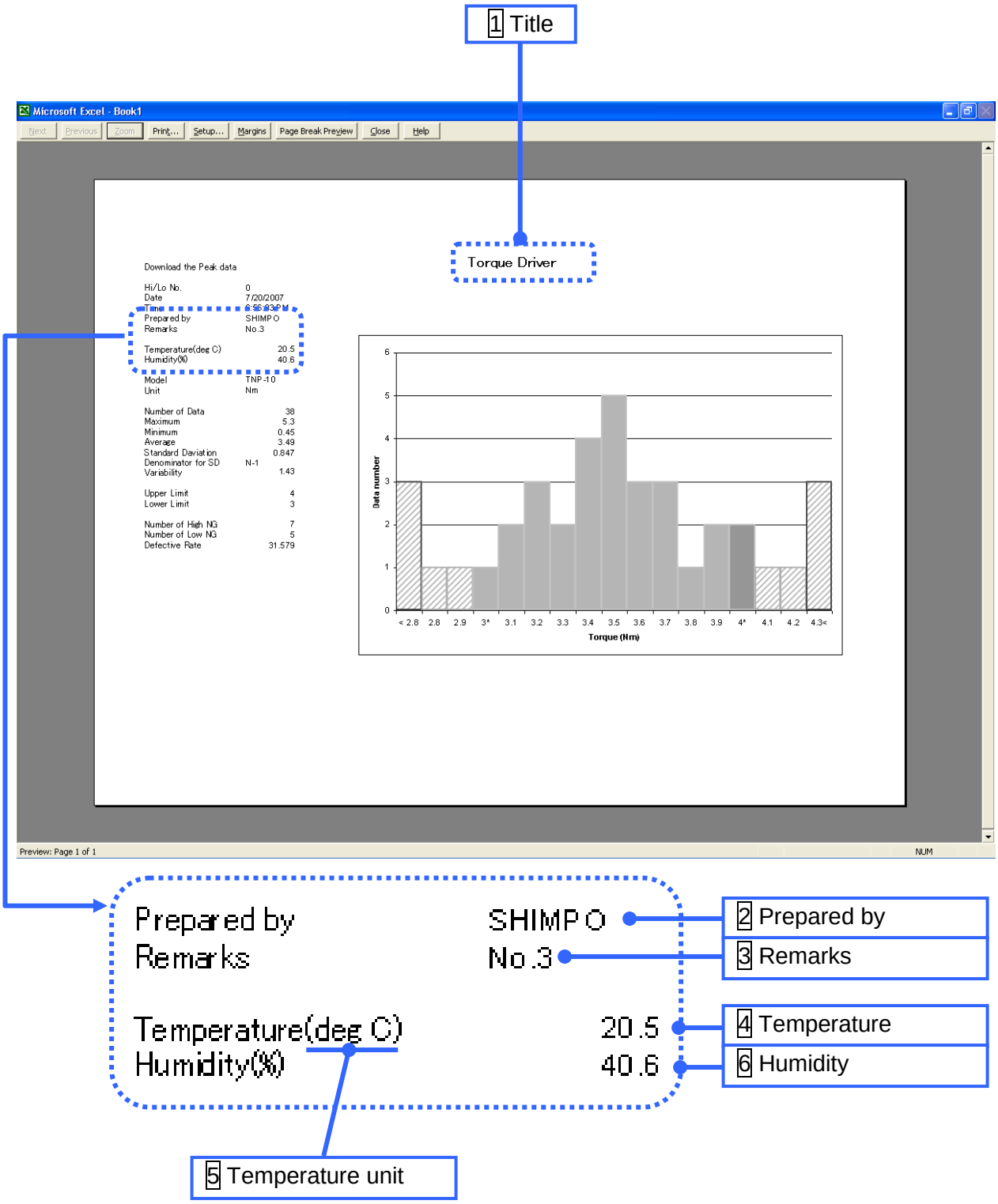


1	Title	Input the title. No limit for number of characters. (*1)
2	Prepared by	Input the measurer. No limit for number of characters. (*1)
3	Remarks	Input some comments. No limit for number of characters. (*1)
4	Temperature	Input temperature degree. Input range: 5 digit including decimal point
5	Temperature Unit	Select the check box, “(deg C)” or “(deg F)”. “deg C”: Celsius, “deg F”: Fahrenheit
6	Humidity (%)	Input the humidity. Input range: 5 digit including decimal point
7	Preview	Open print preview window with 1 – 6. (*2)

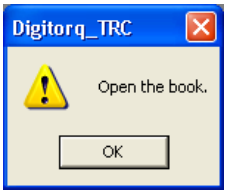
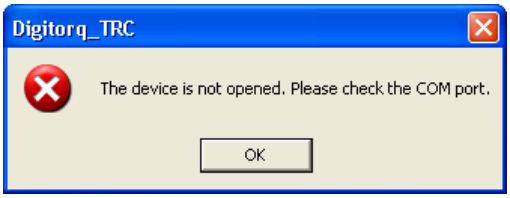
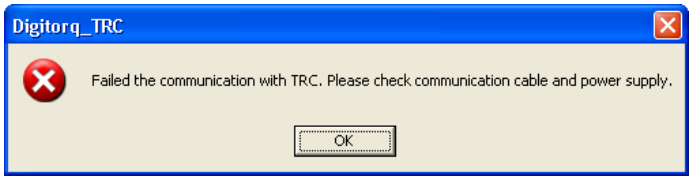
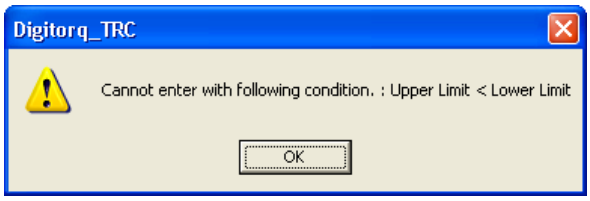
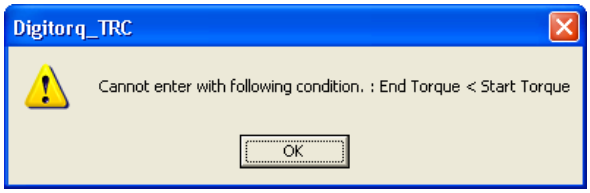
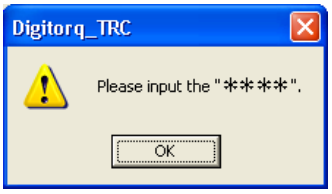
(*1) There is a possibility that letters are missing in the preview when letter string is long.
(*2) Notice of print preview window

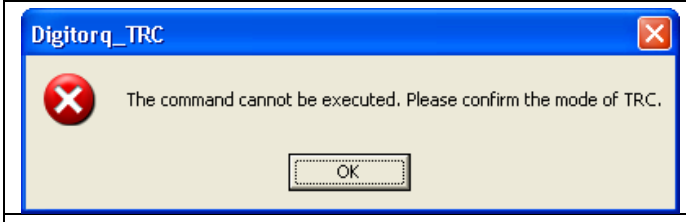
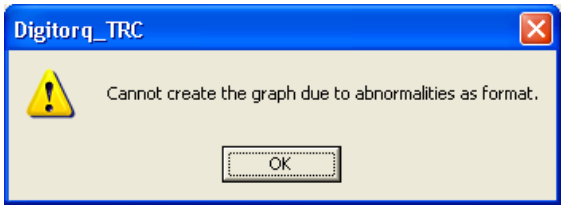
When clicking on the Preview button, the print range will be set automatically. Depending on the usage environment or application, the proper print range might not be selected. In this case, exit the DigiTotrq_TRC, then arrange the print range with the spreadsheet print setting function.

6.4.1 Preview Window



7 Error Message

Error Message	Reason	Action Method
	Start “Digitorq_TRC” without opening book file.	Open the new book file, and then start “Digitorq_TRC”.
	USB cable is not connected, or driver is not installed.	Check USB cable is connected and driver is installed correctly.
	The power of TRC is OFF.	Check the power of TRC is ON.
	Input the value which is Upper Limit< Lower Limit.	Input the value which is Upper Limit>Lower Limit.
	Input the value which is End Torque<Start Torque.	Input the value which is End Torque > Start Torque.
	Click the graph button with no input into each input items. Or click the start button at the continuous data dawn load screen.	Input some value into the empty item according to the message.
	Input the value which is out of range.	Follow the message and input the value within the range.

Error Message	Reason	Action Method
	Input the number of digits after decimal point which is out of range.	Follow the message and input the value within the range.
	Click “Peak” button when memory data is empty.	Operate to store to memory.
	TRC is not measuring mode. (e.g., Function Setting mode)	Set TRC to measuring mode.
	Change the format. Or click Graph button when select the measuring sheet which has no downloaded data.	Select the measuring sheet which has correct format, and click Graph button
	1. PC’s performance is extremely low. 2. Other application is running the same time. 3. The window of this software is moved while the data was downloaded continuously.	1. Use recommended hardware requirement PC. (*1) 2. If other software is running, close it and run Digitorq_TRC again. 3. Change the download speed. (*2)

(*1) Recommended hardware: CPU 1GHz or more, Memory 256MB RAM or more

(*2) Example: Problem happened at 100times/sec. Change to 50times/sec.

8 Input Value Range

Model	Item	Upper Limit				Lower Limit			
		N-m	N-cm	Kg-cm	lb-in	N-m	N-cm	Kg-cm	lb-in
TRC-2	Input range	0 - 2.000	0 - 200.0	0 - 20.39	0 - 17.70	0 - 2.000	0 - 200.0	0 - 20.39	0 - 17.70
	Initial value	*1	*1	*1	*1	*2	*2	*2	*2
	Digits after decimal point	3	1	2	2	3	1	2	2
TRC -5	Input range	0 - 5.000	0 - 500.0	0 - 50.99	0 - 44.25	0 - 5.000	0 - 500.0	0 - 50.99	0 - 44.25
	Initial value	*1	*1	*1	*1	*2	*2	*2	*2
	Digits after decimal point	3	1	2	2	3	1	2	2
TRC -10	Input range	0 - 10.00	0 - 1000	0 - 102.0	0 - 88.5	0 - 10.00	0 - 1000	0 - 102.0	0 - 88.5
	Initial value	*1	*1	*1	*1	*2	*2	*2	*2
	Digits after decimal point	2	0	1	1	2	0	1	1

Model	Item	Torque Class				Start Torque			
		N-m	N-cm	Kg-cm	lb-in	N-m	N-cm	Kg-cm	lb-in
TRC -2	Input range	0.001 - 2.000	0.1 - 200.0	0.01 - 20.39	0.01 - 17.70	0 - 2.000	0 - 200.0	0 - 20.39	0 - 17.70
	Initial value	0.1	10	1.02	0.89	0	0	0	0
	Number of digits after decimal point	3	1	2	2	3	1	2	2
TRC -5	Input range	0.001 - 5.000	0.1 - 500.0	0.01 - 50.99	0.01 - 44.25	0 - 5.000	0 - 500.0	0 - 50.99	0 - 44.25
	Initial value	0.25	25	2.55	2.22	0	0	0	0
	Number of digits after decimal point	3	1	2	2	3	1	2	2
TRC -10	Input range	0.01 - 10.00	1 - 1000	0.1 - 102.0	0.1 - 88.5	0 - 10.00	0 - 1000	0 - 102.0	0 - 88.5
	Initial value	0.5	50	5.1	4.5	0	0	0	0
	Number of digits after decimal point	2	0	1	1	2	0	1	1

Model	Item	End Torque				Trigger			
		N-m	N-cm	Kg-cm	lb-in	N-m	N-cm	Kg-cm	lb-in
TRC-2	Input range	0 - 2.000	0 - 200.0	0 - 20.39	0 - 17.7	0 - 2.000	0 - 200.0	0 - 20.39	0 - 17.7
	Initial value	2	200	20.39	17.7	0	0	0	0
	Number of digits after decimal point	3	1	2	2	3	1	2	2
TRC -5	Input range	0 - 5.000	0 - 500.0	0 - 50.99	0 - 44.25	0 - 5.000	0 - 500.0	0 - 50.99	0 - 44.25
	Initial value	5	500	50.99	44.25	0	0	0	0
	Number of digits after decimal point	3	1	2	2	3	1	2	2
TRC -10	Input range	0 - 10.00	0 - 1000	0 - 102.0	0 - 88.5	0 - 10.00	0 - 1000	0 - 102.0	0 - 88.5
	Initial value	10	1000	102.0	88.5	0	0	0	0
	Number of digits after decimal point	2	0	1	1	2	0	1	1

*1 Initial value of upper limit value: Upper limit value of selected Hi/Lo No. of TRC.

*2 Initial value of lower limit value: Lower limit value of selected Hi/Lo No. of TRC.