

# FGS-VC Series Motorized Stand Software Operation Manual

Read Manual thoroughly prior to operation.

Use instrument only after reading the complete manual.  
Follow all safety precautions.

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# 1. Software Overview

Thank you for choosing the FGS-VC Series Motorized Stand; as an added feature the FGS-VC can be operated with the free software called FGT-VC.

## What is FGT-VC?

FGT-VC 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 NIDEC DRIVE TECHNOLOGY FGT-VC Software.**

For additional updates and support our website at: <http://www.nidec.com/en/nidec-drivetechnology/> or call local NIDEC DRIVE TECHNOLOGY office.

# 2. Software Requirements and Initial Information

The FGT-VC is an Add-in tool for Microsoft Excel 2016/2019.

This tool allows data to be collected and downloaded via USB cable, which in turn tabulates these data to useful information.

## Software requirements:

- Microsoft Windows 10 (64bit)
- Microsoft Excel 2016 (32bit/64bit)
- Microsoft Excel 2019 (32bit/64bit)

## Software features:

- Download data in testing(MANU/SING/CONT/PROG mode)
- Set repeat count and sampling rate
- Graph function
- Judgment of upper and lower limit
- Statistic calculation
- Set trigger function

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

# 3. Reminders



Caution warning holds important safety information



Reminder: holds important key information for the product.



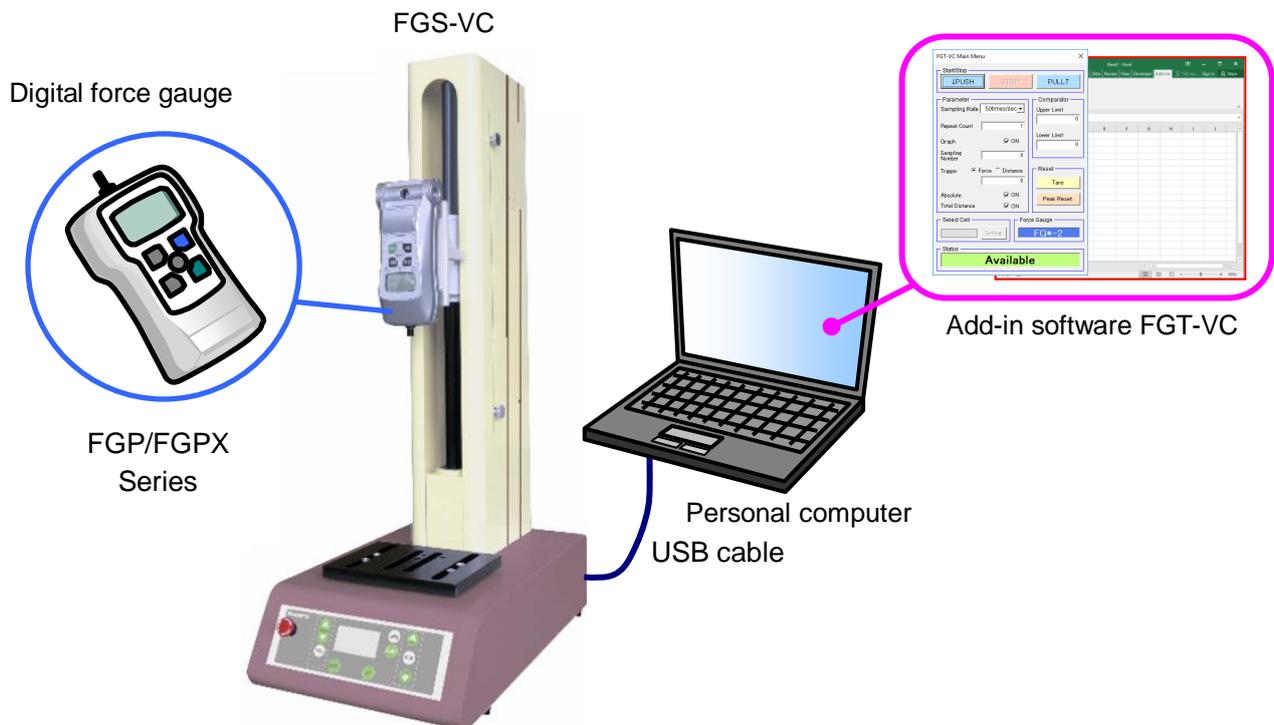
The copyright of the software and its documents belongs to NIDEC DRIVE TECHNOLOGY Corp. The foregoing warranties are exclusive and in lieu of all other express and implied warranties (except of title including but not limited to implied warranties of merchantability, fitness for a particular purpose, performance, or otherwise), and in no event shall the Company be liable for claims (based upon breach of express or implied warranty, negligence, or otherwise) for any other damages, whether direct, immediate, incidental, foreseeable, consequential, or special.

## 4. Set Up Procedure

### What will you need to get started?

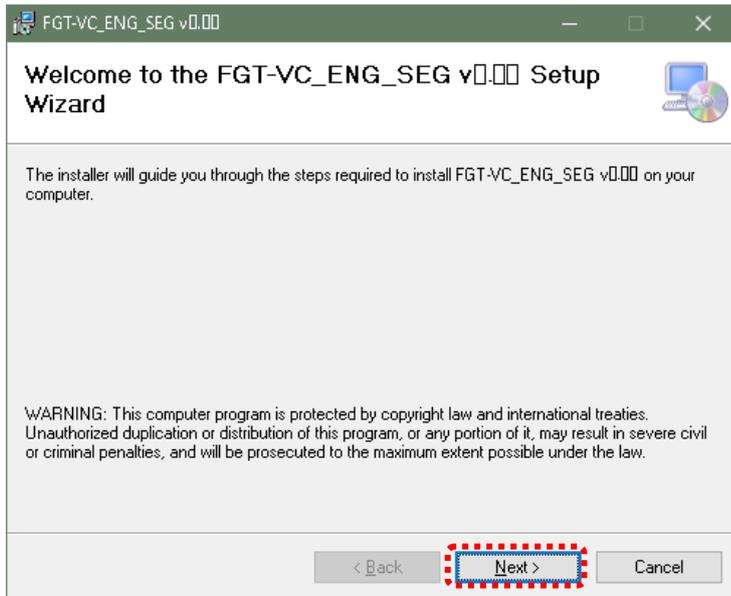
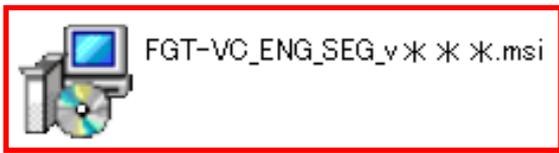
- A copy of the FGT-VC software, this software can be downloaded from <http://www.nidec.com/en/nidec-drivetechnology/>
- Visit this website for future and additional updates.
- USB A to USB B cable plugged in to an open port from the Host PC.
- USB port 1.1 or higher
- Microsoft Excel 2016/2019 (32bit/64bit) (these versions includes the necessary libraries needed to make the software works).

### Structure

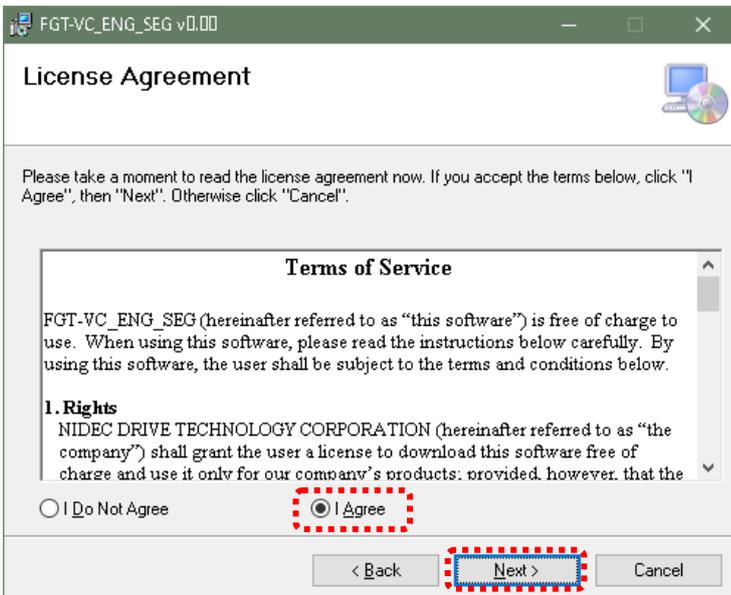


## 4.1. Install Procedure of FGT-VC Application Software

Double click the FGT-VC\_ENG\_SEG\_v\*\*\*.msi, the Windows installer is started.

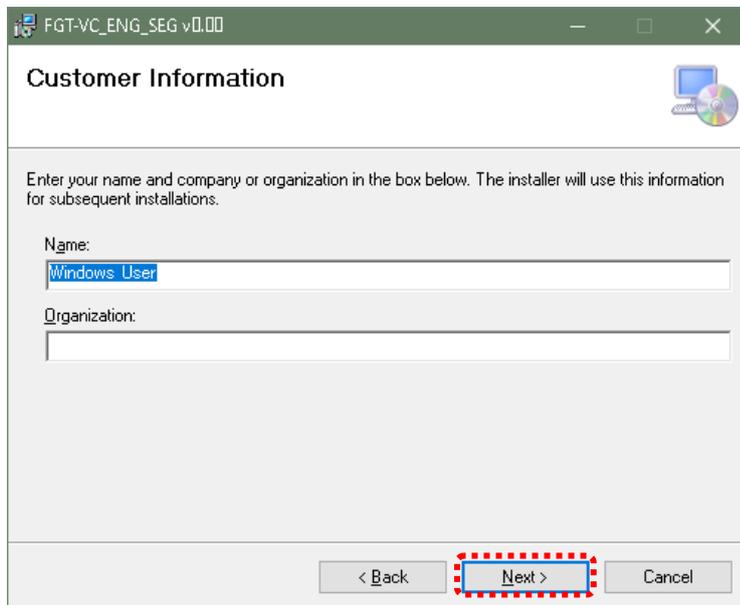


Click "Next >".

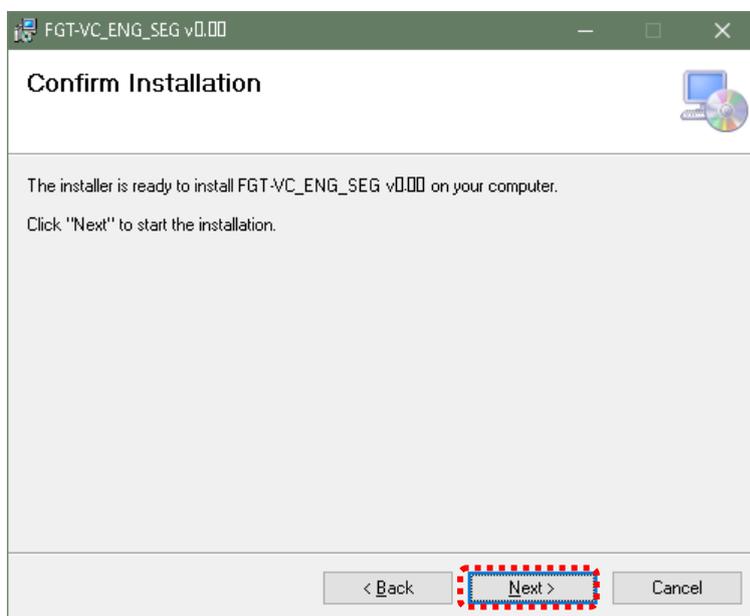
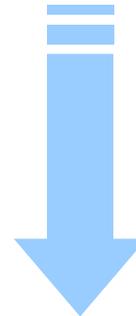


Read the Terms of Service.  
If you agree, set the check button of  
"I Agree", next click "Next >".

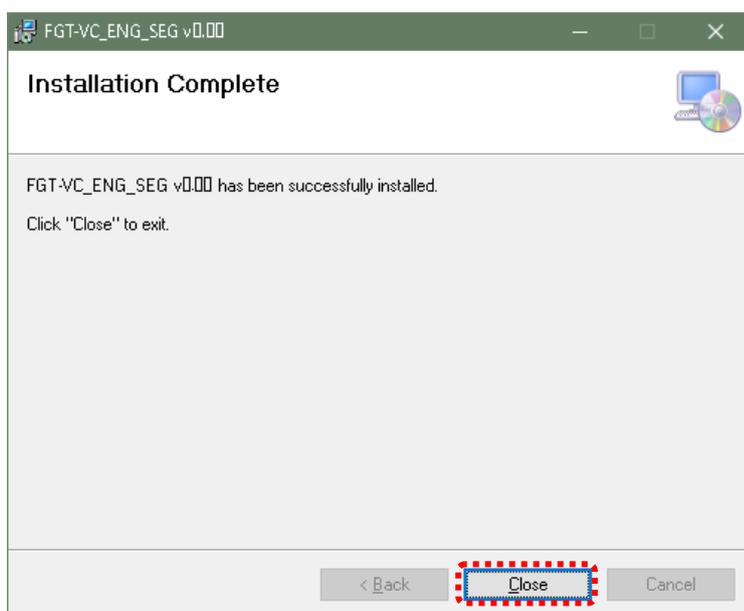




Fill in Name and Organization.  
Click "Next >".

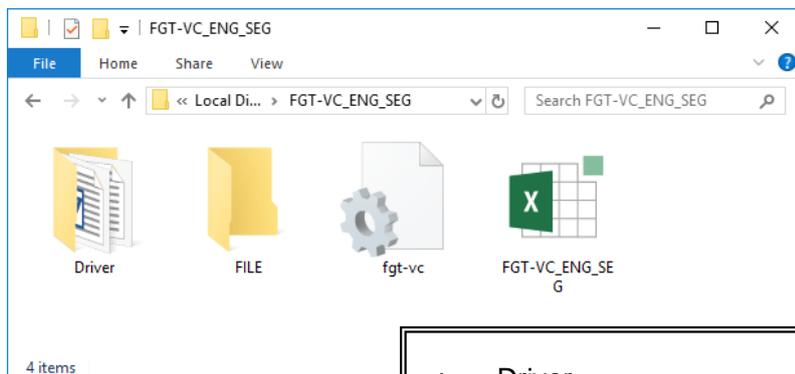


Confirm indicated items.  
Click "Next".



When complete to install, click "Close".

After completing the install, the folder of “c:\FGT-VC\_ENG\_SEG” is made, and the files and folder are stored as shown in below diagram.



- |      |                    |  |
|------|--------------------|--|
| +--- | Driver             | : USB driver folder                      |
| +--- | FGT-VC_ENG_SEG.xla | : Excel Add-in software (FGT-VC)         |
| +--- | fgt-vc.ini         | : FGT-VC ini file                        |
| +--- | FILE               | : Saving folder of measurement data file |



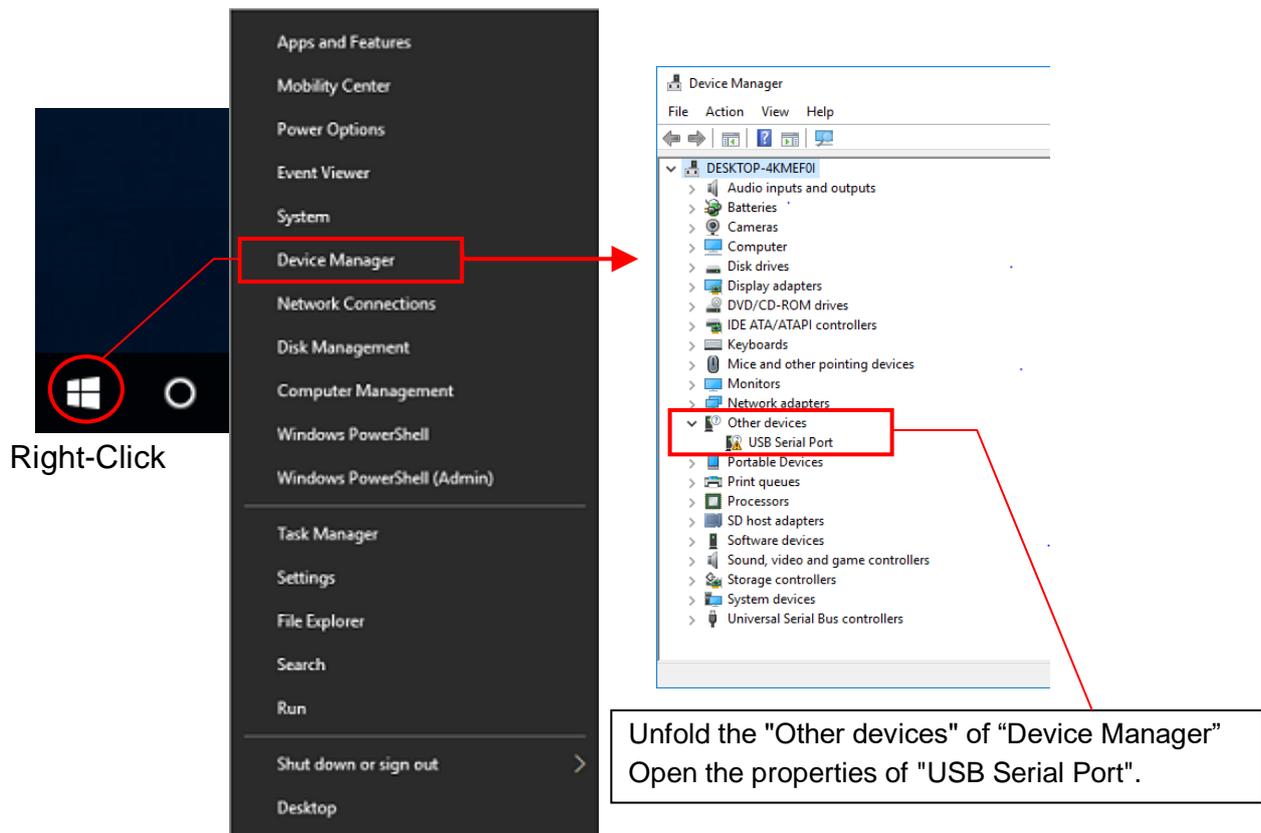
Do not change the content or move the Driver folder and fgt-vc.ini.  
The software might not operate properly.

## 4.2. Install Procedure of USB Driver for FGT-VC

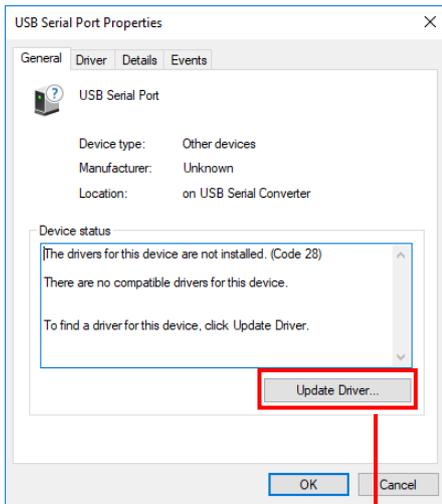
When the FGT-VC is turned on, connect the USB cable to the USB port on the PC. The driver's installation method slightly differs depending on the PC environment. Perform installation according to the PC environment specifications below.

### Installation for Windows10

After turning on FGT-VC, connect the USB cable between the stand and the PC. Then go to the Device manager.

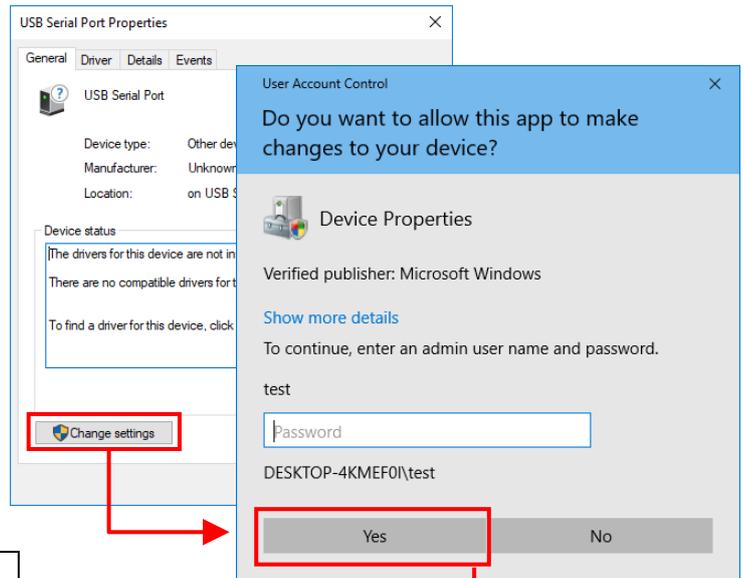


●Administrator authority

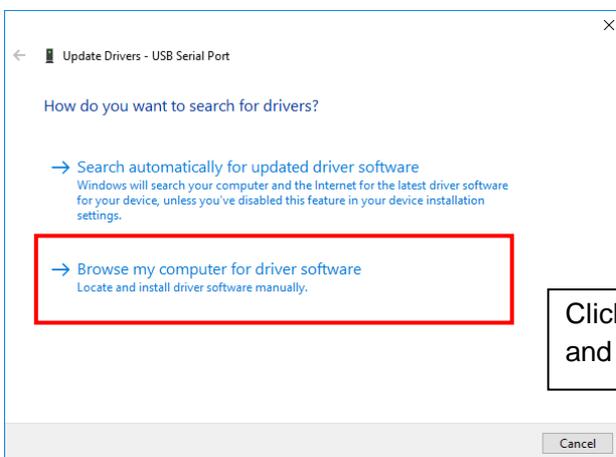
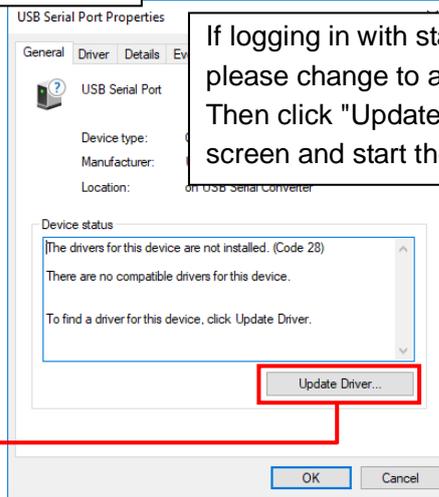


Click "Update Driver" on the property screen, Start the driver updating.

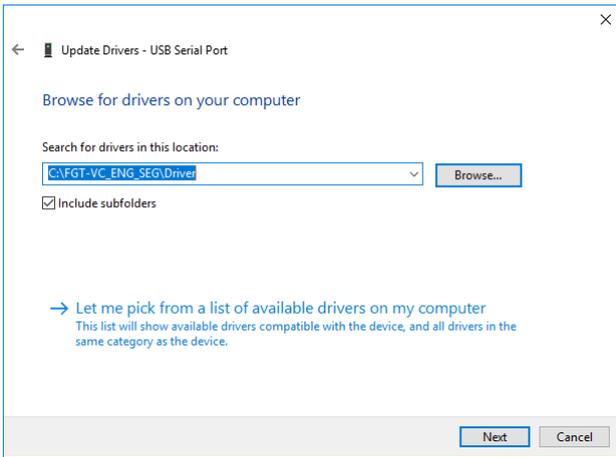
●Standard user authority



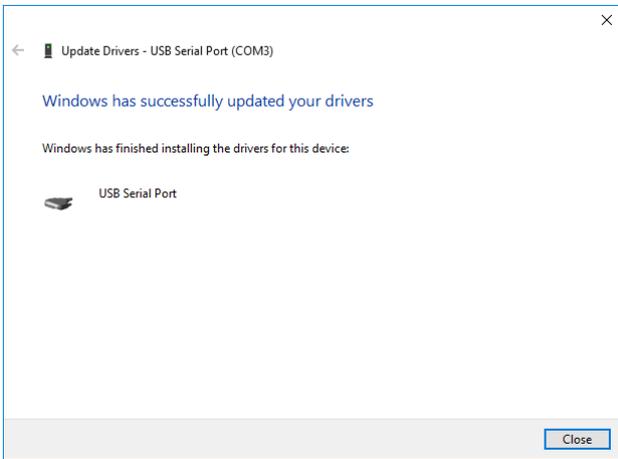
If logging in with standard user authority, please change to administrator authority at first. Then click "Update Driver" on the property screen and start the driver updating.



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

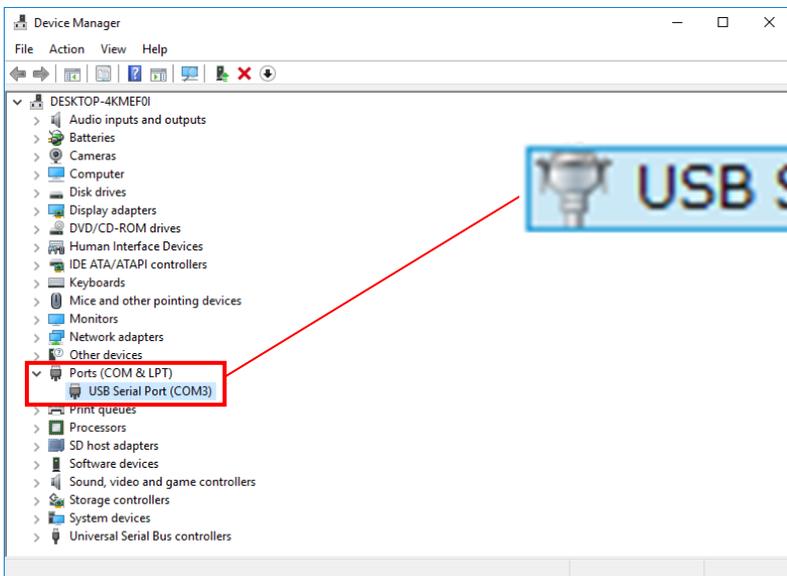


Select "C:\FGT-VC\_ENG\_SEG\Driver" from "Browse" and click "Next"



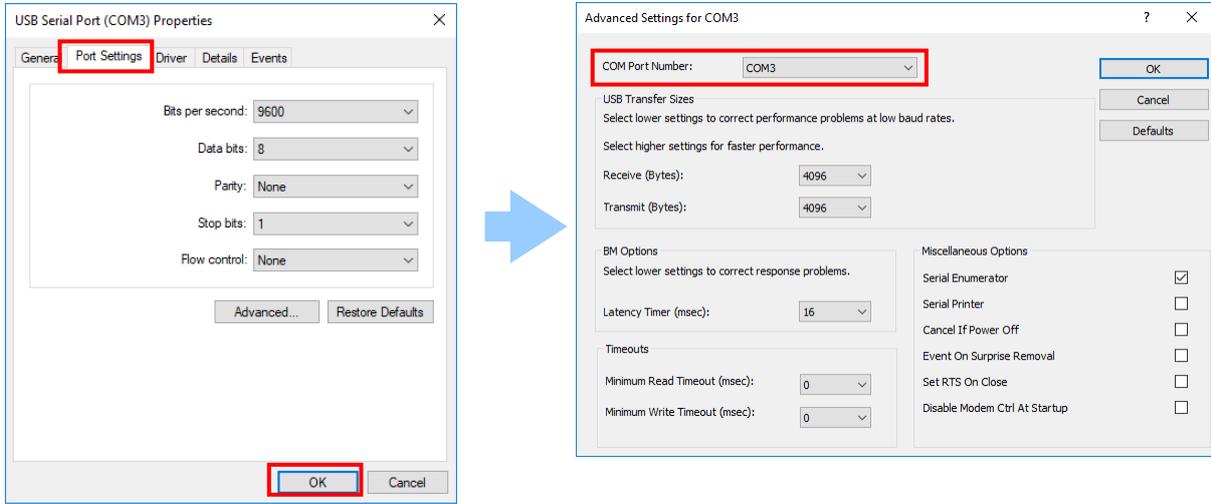
After installation is completed, the above screen will be displayed. Please click "Close" to finish.

- Confirming COM port number  
Check the assigned COM port on the device manager.



● Changing the COM port number

If you desire to change the COM port number, please refer to the screen shots below.

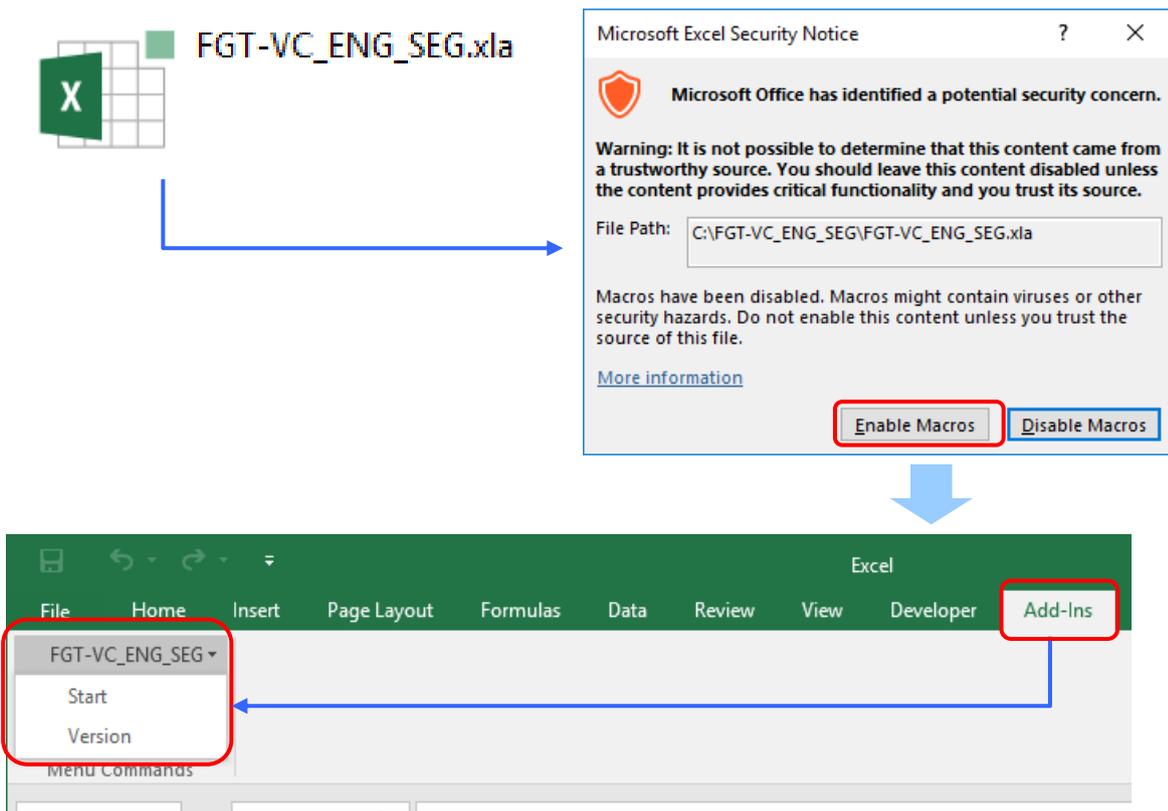


## 5. Adding the FGT-VC Software

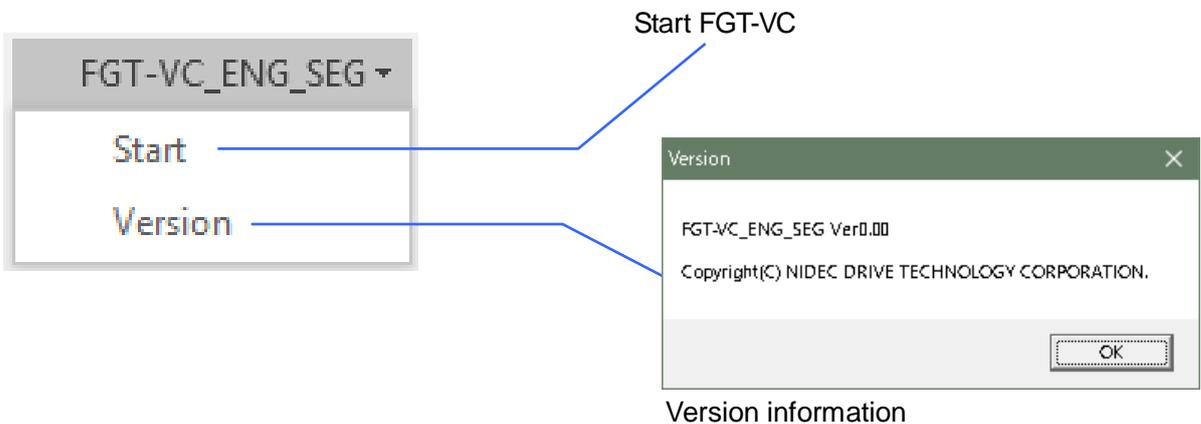
### 5.1. Startup

Double click the "FGT-VC\_ENG\_SEG.xla" file in the " FGT-VC\_ENG\_SEG " folder under the C:\ directory.  
The Excel screen is launched.

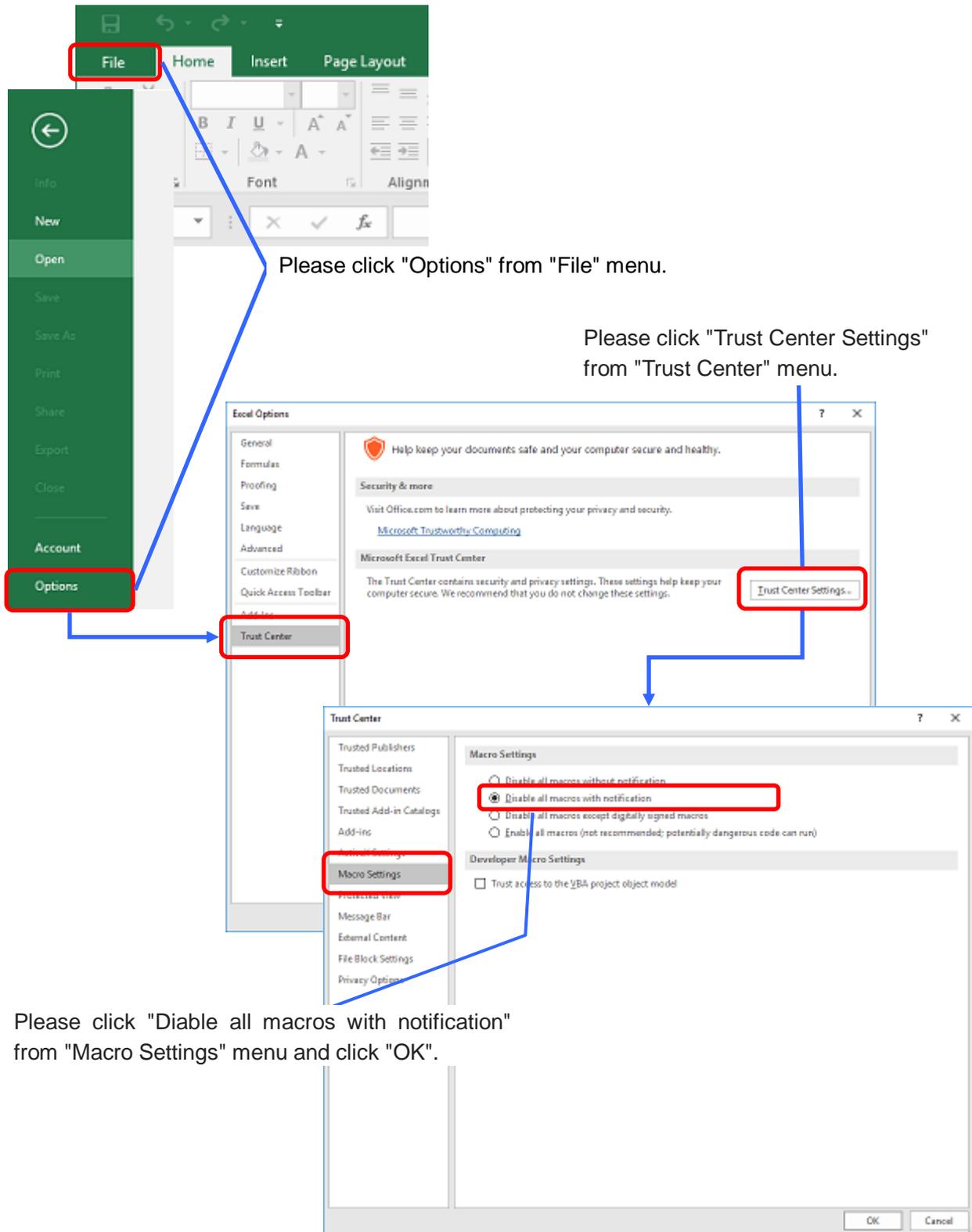
- The enable/disable macros selection window is displayed when this software starts. Select "Enable Macros (E)".  
"Add-Ins" is added on the menu bar of Excel screen, and in it the " FGT-VC\_ENG\_SEG " menu can be selected.



- Connect the TNP and PC, turn on the TNP, and open a new book file. Then, select "Start" from the " FGT-VC\_ENG\_SEG " menu added in the Excel menu to start "FGT-VC".
- Select "Version information" to check the software version.

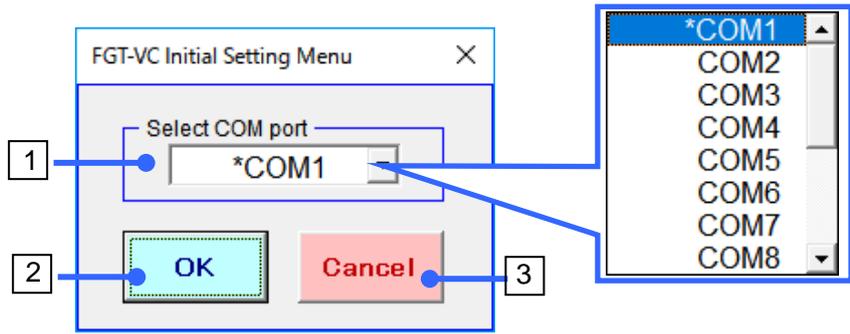


- If the macro setting does not appear, change the settings manually by following the procedure below.



## 5.2. Initial Dialog

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

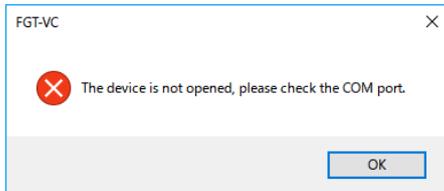


1	Selection COM port	Select the COM port number in the list box. It should select the number which is confirmed or set at Section 4.4 Confirmation of COM port. The available COM port is marked.
2	OK button	Go to main menu.
3	Cancel button	Exit the software.

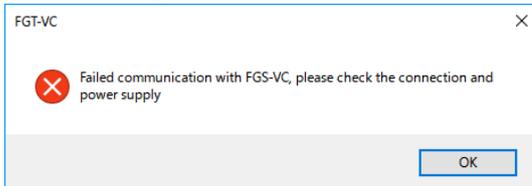


After clicking the OK button, if the PC can not communicate with the FGS-VC, it does not go to main menu.

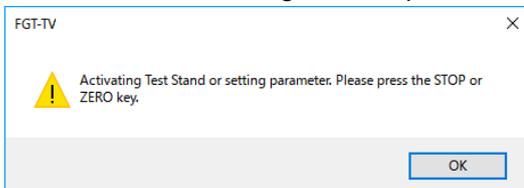
1. It might mismatch the COM port number, or PC is not connected with FGS-VC.



2. FGS-VC might turn off. Or other than those above errors happen.



3. The FGS-VC is moving, or the operation mode is parameter setting.



## 5.3. Measurement Data File

In the FGT-VC, the measurement data file is named automatically and is stored in the c:\FGT-VC\_ENG\_SEG\FILE.

Save the measurement data file manually because the file is not saved automatically.

**File Name**

“VC” + Year/Month/Day(8 digits) + “-” + Sequential number + “.xlsx”

Example: **VC20180401-2.xlsx**

The file made at the 2<sup>nd</sup> time in 2018 April the 1<sup>st</sup>.

**Sheet Name**

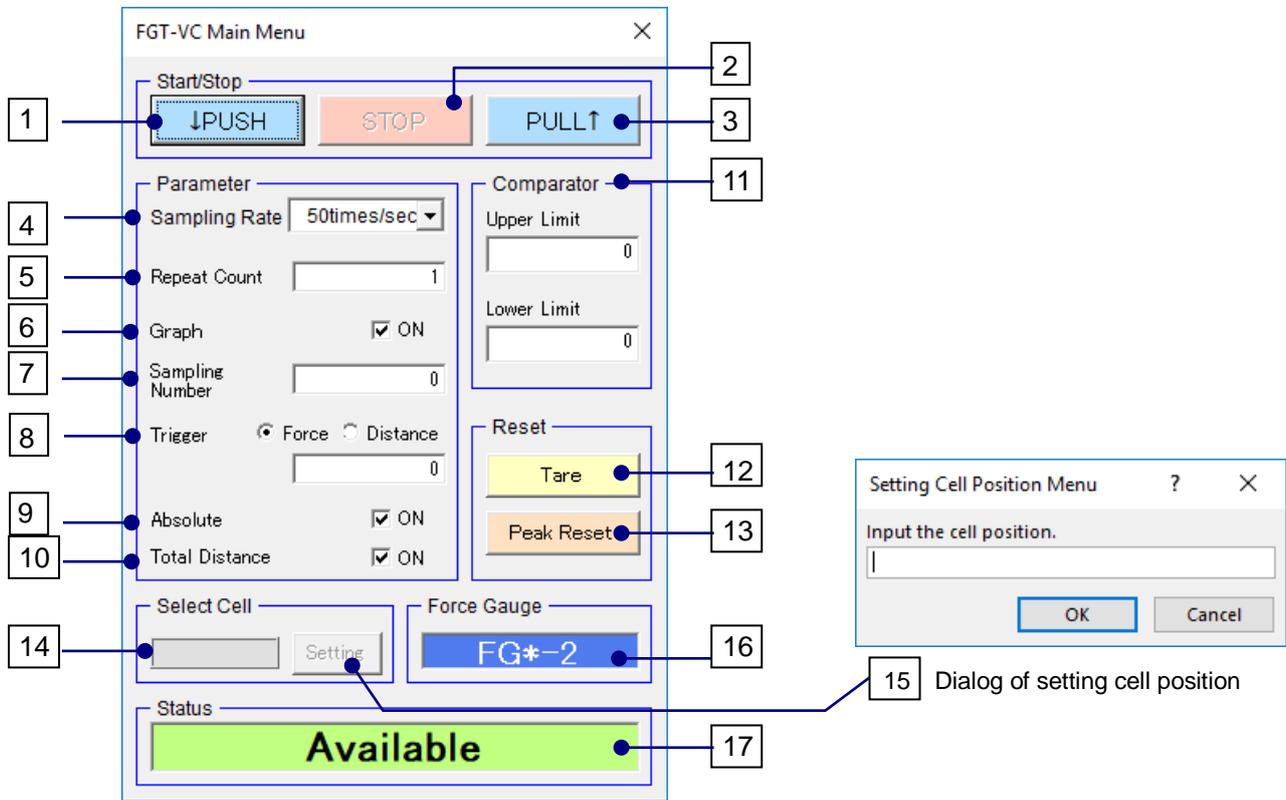
The name of the sheet of Excel is "VC-" + Sequential number.

Example: **VC-17**

It is the 17<sup>th</sup> measurement data.

**5.4. Main Menu**

The buttons and boxes are described following table.



No.	Items	Description	Input range	
1	PUSH button	Move to PUSH direction and start to measure. *1 The operation of FGS-VC depends on the present mode.		
2	STOP button	Stop to move and measure.		
3	PULL button	Move to PULL direction and start to measure. *1 The operation of FGS-VC depends on the present mode.		
4	Sampling Rate	List box consists of 10, 20 and 50 times/sec.		
5	Repeat Count	Set the repeat count at CONT and PROG mode.	1 – 9999	
6	Graph check button	The graph of force vs. distance is generated if the check is on.		
7	Sampling Number	Set the available measurement times in CONT or PROG mode. Because the measurement time of these modes is maximum 9999, all measurement data can not obtain by the limitation of sheet. So it is necessary to thin out the taken data. The setting data is number of thinning out.	Graph on Graph off	0-250 0-9999
8	Trigger	Force	If $ Force  \geq Trigger$ , start to measure.	
		Distance	If $ Distance  \geq Trigger$ , start to measure.	
			Depend on the mounted force gauge.	
			0.00 – 400.0	

9	Absolute check button	If the check is on, the force data indicates absolute value.	
10	Total Distance check button	If the check is on, the distance indicates total moving mode. If the check is off, the distance indicates absolute mode, i.e., round trip mode.	
11	Comparator Upper limit Lower limit	The maximum value is compared with upper and lower limit. Can not input the following equation. $(Upper\_Limit) < (Lower\_Limit)$ If Upper and Lower limit both are zero, the comparator does not work.	Depend on the mounted force gauge.
12	Tare button	Operate to tare.	
13	Peak Reset button	Reset the peak of the connected force gauge.	
14	Select Cell	The start cell position is displayed. It is available when the Graph check box is off.	
15	Setting Cell Position Menu	Clicking the Setting button in Select Cell, the menu indicates. Can input the start cell position.	
16	Force Gauge	The model name of the connected force gauge is displayed.	
17	Status	Indicate the status of FGS-VC.	

\*1: In case of PROG mode, the operation moves to the direction of PROG parameter regardless of clicked button(PUSH/PULL).

In case of JOG mode, the buttons do not work.

## 5.5. Measuring

Clicking **PUSH** or **PULL** button in the main menu, FGS-VC starts and measures.

### Measuring data

When FGS-VC starts, the Excel sheet is taken measurement data which is distance and force data.

The taking number of measurement data depends on the parameter of Sampling Rate.

10 times/sec                      Get 10 measurement data per second.

20 times/sec                      Get 20 measurement data per second.

50 times/sec                      Get 50 measurement data per second.



The Sampling Rate is a rough value.

The setting parameter data is not guarantee accurately.

### Maximum measurement data

The maximum measurement data of one operation (count) is 32,000 data at Graph on and 65,535 data at graph off respectively. When the input cell in Excel exceeds the limitation, the error message occurs and can not measure.



When the user saves huge measurement data into a file, the operating speed might be very slow or the PC might freeze.

Save to new BOOK file or overwrite frequently for solving the problems.

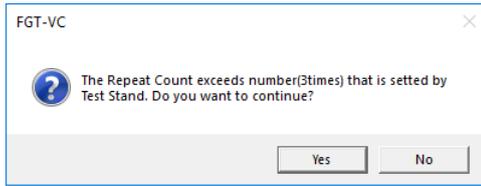
### Repeat Count

When the operation is continuously done in CONT or PROG mode, the Repeat Count is available.

The parameter is able to set maximum 9,999 counts in Graph off, 250 counts in Graph on respectively.



The repeat count can be set respectively of FGS-VC and PC.  
When the setting value of PC is larger than FGS-VC, the following message is displayed.



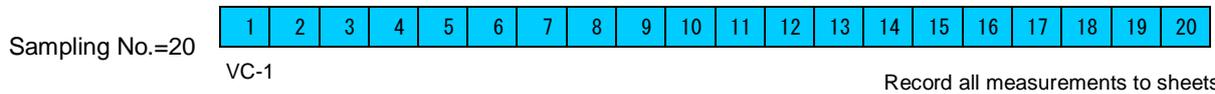
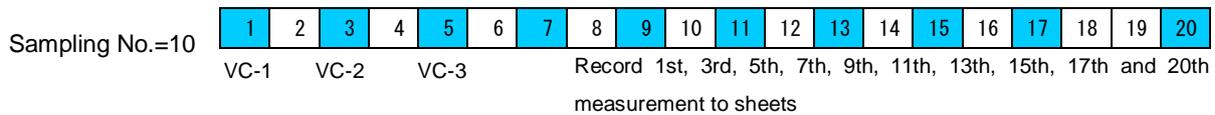
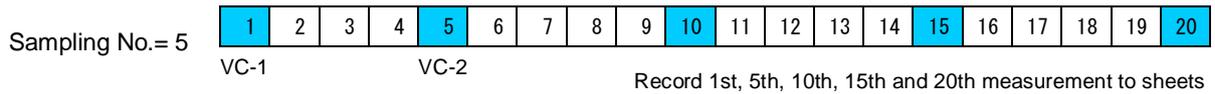
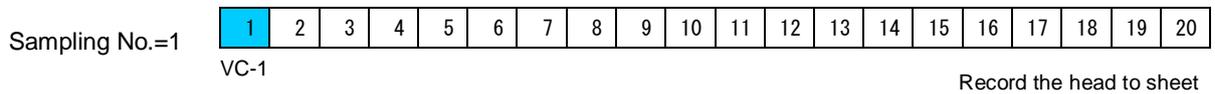
In this case FGS-VC starts to measure, however please note that the repeat count can be executed only until the setting repeat count of FGS-VC.

### Sampling Number

Set the available measurement times in CONT or PROG mode. Because the measurement time of these modes is maximum 9,999, all measurement data can not obtain by the limitation of sheet. So it is necessary to thin out the taken data. The setting data is number of thinning out.

When the Sampling Number is set apart from 0, the pick-upped measurement data is as follows.

Example: Repeat Count = 20 (Start VC-1)



: Recorded measurements

### How to select from all measurement

- When the Sampling Number is 1, record the 1st measurement data.
- When the Sampling Number is more than 2, the record method is as follows.

$$A = \frac{y-1}{x-1} \quad (1)$$

Define

- A: Interval of recording
- x: Sampling Number
- y: Repeat Count

According to equation (1), let the recorded measurement be  $B(1), B(2), \dots, B(x)$ ,  $B(c)$ th measurement data is:

$$B(c) = A \times c + 1 \quad (2)$$

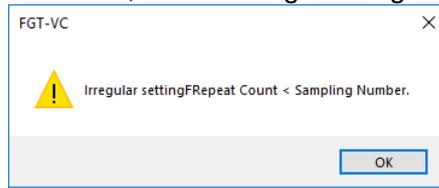
c: 1 to x

A first and last measurement is always recorded.

If the Sampling Number is 0, all measurement is recorded.



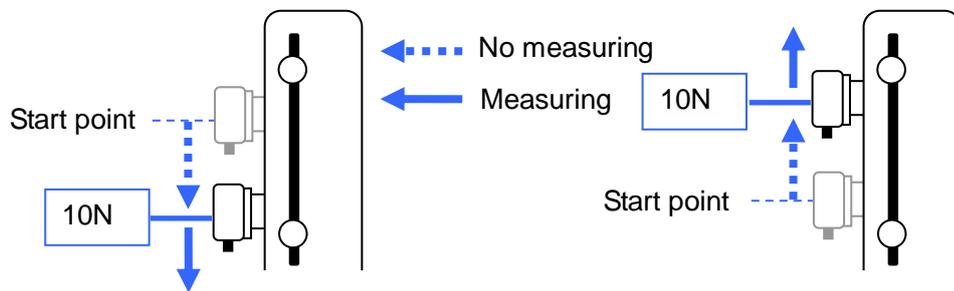
The Sampling Number can not input the value larger than the Repeat Count.  
If the wrong value is set, the following message box will be opened.



### Trigger

The timing to the acquisition starting the measurement data can be decided by the Trigger.  
The Trigger is able to select force or distance. The trigger detects by the absolute force or distance data.  
If the Total Distance check button is ON, the trigger detects by total distance.

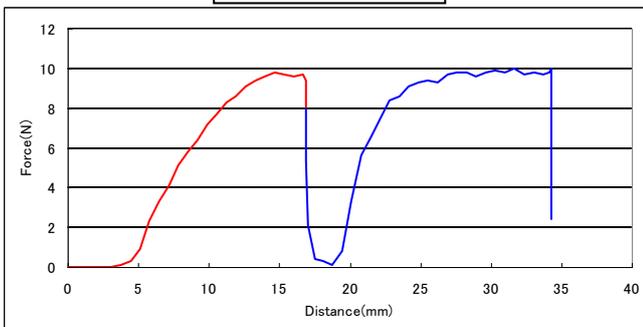
Example: Trigger is set 10N.



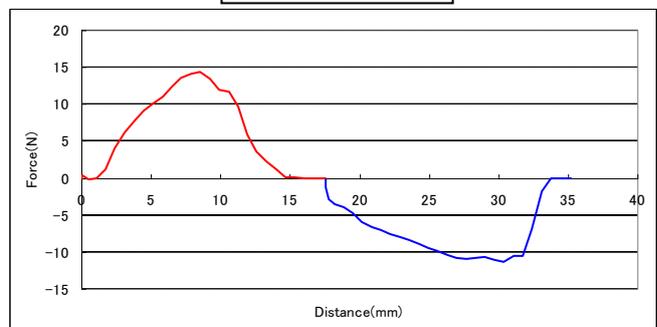
### Absolute

If the Absolute check button is ON, the force data indicates absolute value.

Absolute ON

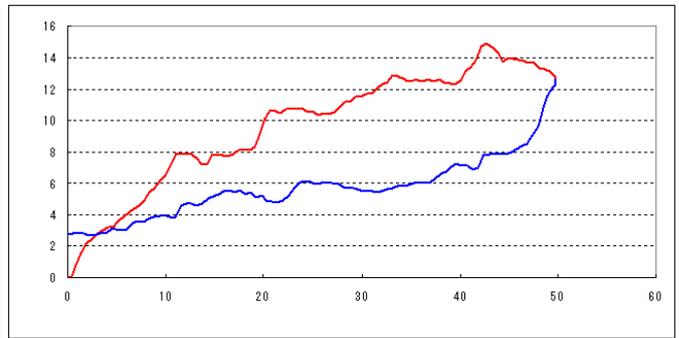
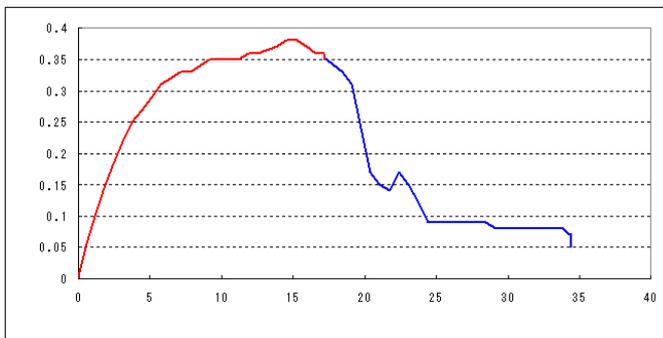
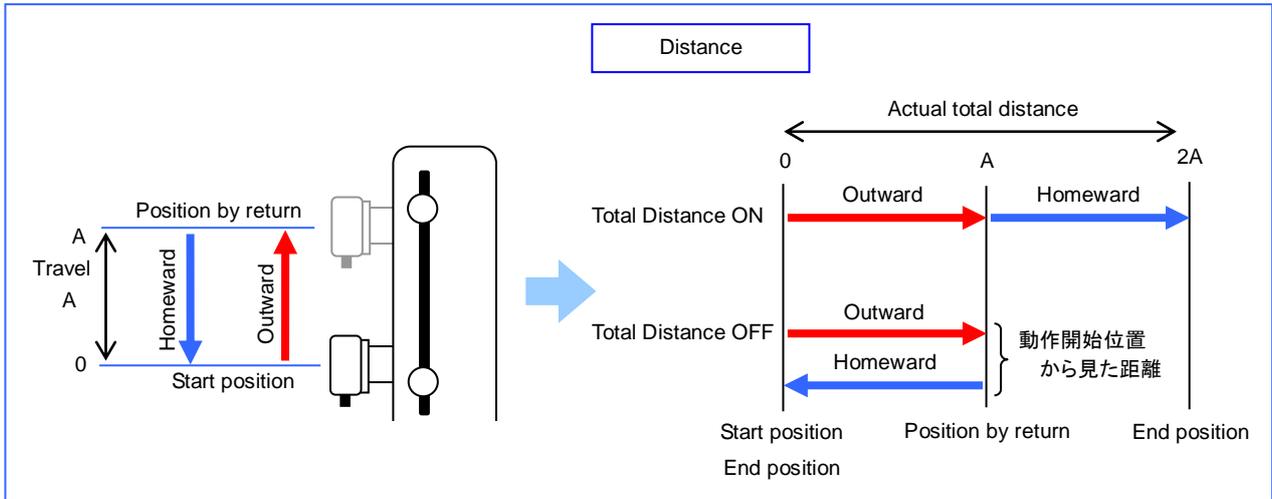


Absolute OFF



**Total Distance**

If the Total Distance check button is ON, the distance indicates total moving mode.  
 If the check is OFF, the distance indicates absolute mode, i.e., round trip mode.  
 The check is available in SING, CONT and PROG mode.

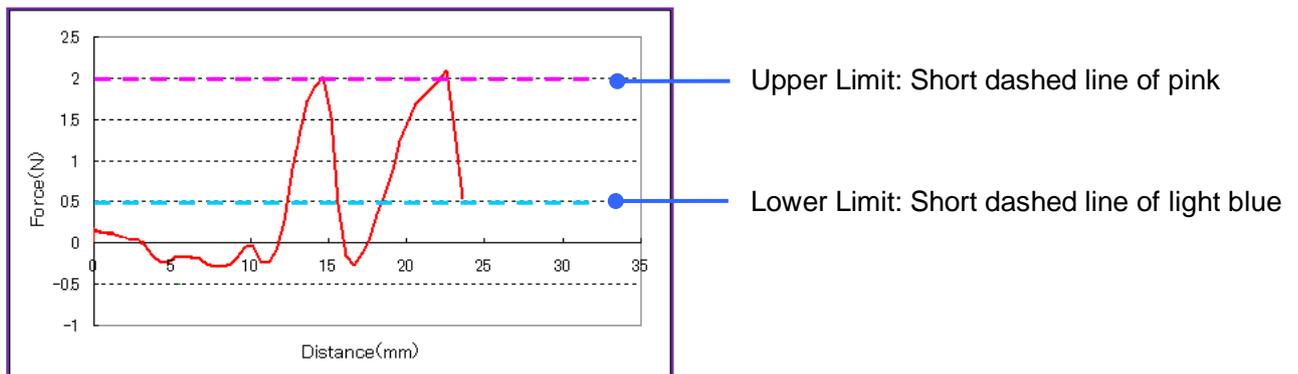


**Comparator**

The maximum value is compared with upper and lower limit.  
 If Upper and Lower limit both are zero, the comparator does not work.

Condition	Result
$(Lower\_Limit) \leq (Maximum\_Value) \leq (Upper\_Limit)$	OK
$(Upper\_Limit) < (Maximum\_Value)$	HIGH
$(Lower\_Limit) > (Maximum\_Value)$	LOW

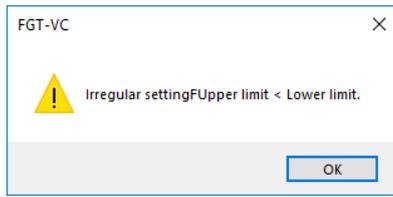
In case of graph, the Upper and Lower Limit are displayed as follows:





The Upper and Lower Limit can not input  $(Upper\_Limit) < (Lower\_Limit)$ .

If the wrong value is set, the following message box will be indicated.

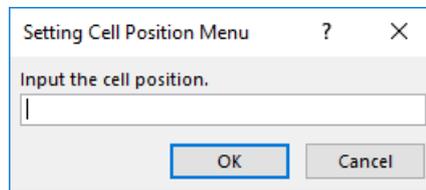
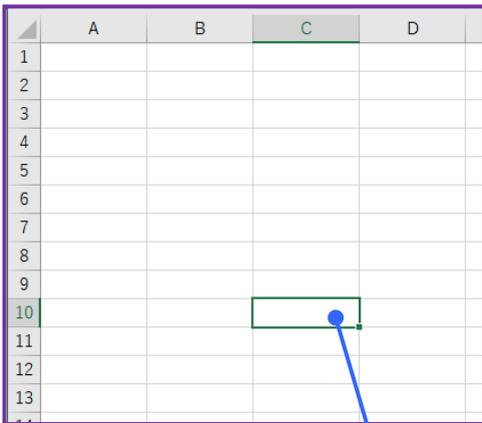


### Select Cell

The Select Cell is available when the Graph check box is OFF.

If the Graph is ON, the cell position fixes (\$A\$1).

When the Setting button is clicked at Graph OFF, the following input dialog is displayed.



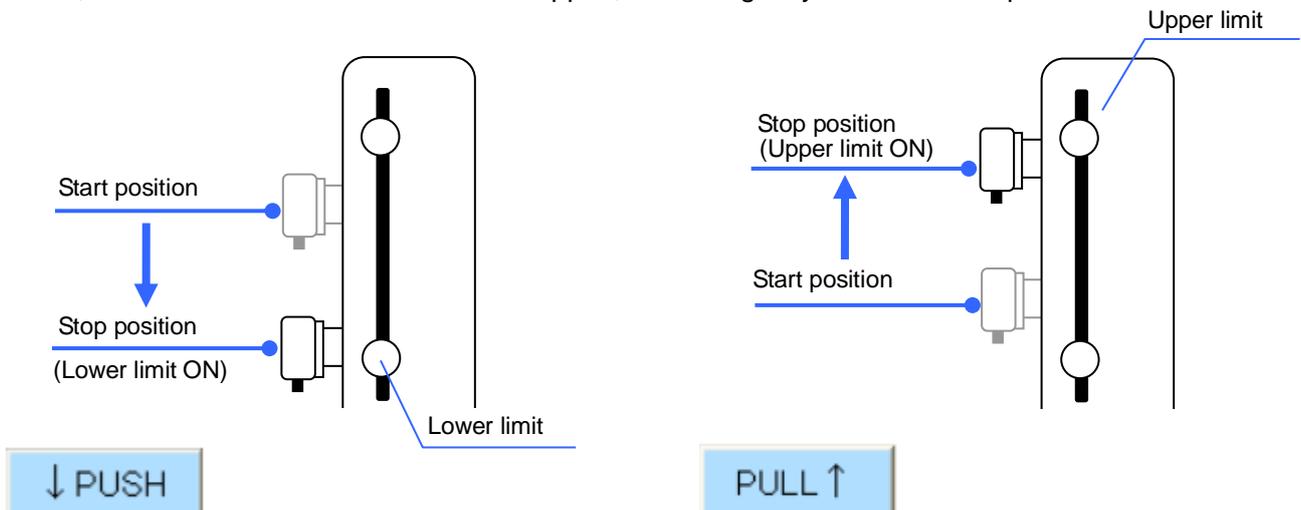
Setting Cell Position Menu

Measurement data is stored from the selected cell position at measuring.  
(If the cell position is selected an area, the start position is on the upper left.)

## 5.6. MANU mode

### 5.6.1. Operation

The test stand will move in the downward or upward direction when the respective **PUSH** or **PULL** button is clicked. The stand will continue to move in the selected direction until one of the following occurs: **STOP** button is clicked, one of the manual limit switches is tripped, the emergency reset button is pushed.



### 5.6.2. Record of Measurement Data

The record sheet is as follows:

#### Graph ON

	A	B
1	Date	7/25/2018 14:30:18
2		
3	Direction	PUSH
4	Test mode	MANU mode
5	Force Gauge	FG*-2
6	Force Unit	lbf
7	Sampling Rate	10times/sec
8	Trigger(Force)	0
9	Number of data	104
10	Maximum	0.001
11	Minimum	0
12	Average	0
13		
14	Upper limit	0
15	Lower limit	0
16	Result	Invalid
17		
18		
19		
20	Distance(mm)	Force(lbf)
21	0	0
22	0	0
23	0	0
24	0	0
25	0	0
26	0	0

Header

Measured data

#### Graph OFF

	A	B
1	Distance(mm)	Force(N)
2	0	0.4
3	0	0.4
4	0	0.4
5	0	0.4
6	0	0.4
7	0.01	0.4
8	0.07	0.5
9	0.14	0.5
10	0.22	0.5
11	0.31	0.5
12	0.41	0.5
13	0.52	0.5
14	0.63	0.4
15	0.75	0.4

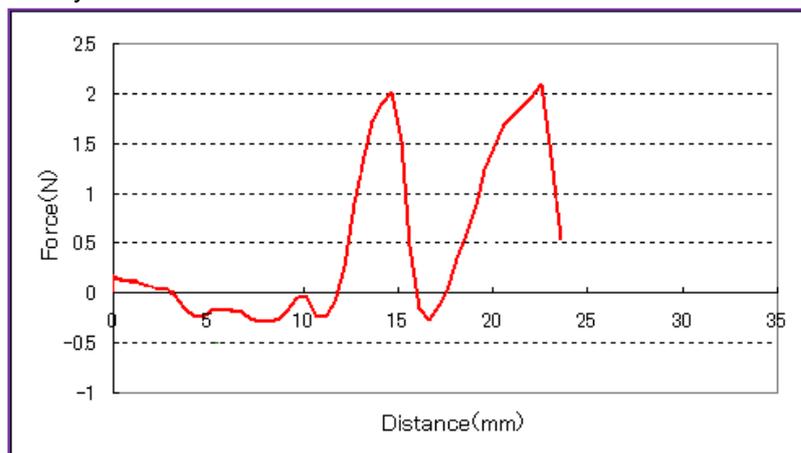
Header

Measured data

### 5.6.3. Graph

After the measurement is finished, the graph is made when the Graph check is ON.

The horizontal axis is distance, the vertical axis is force. The measurement data is recorded from start to end position, the data is indicated by red line.

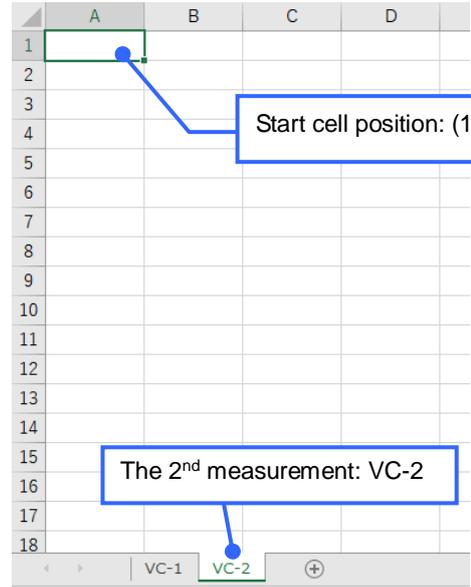
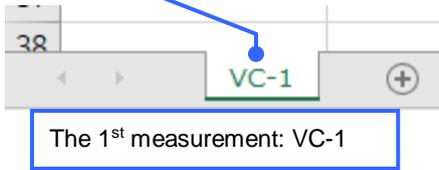
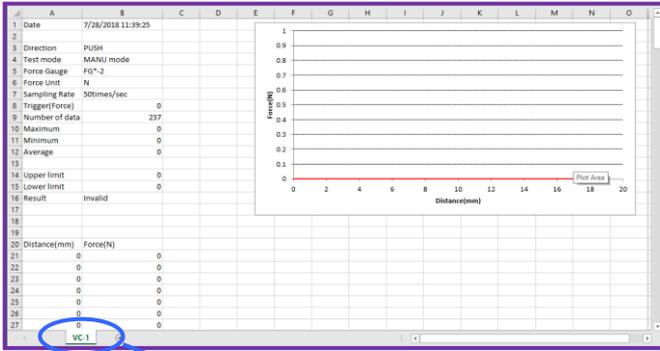


5.6.4. Sheet of each test

**Graph ON**

One test is assigned one sheet.

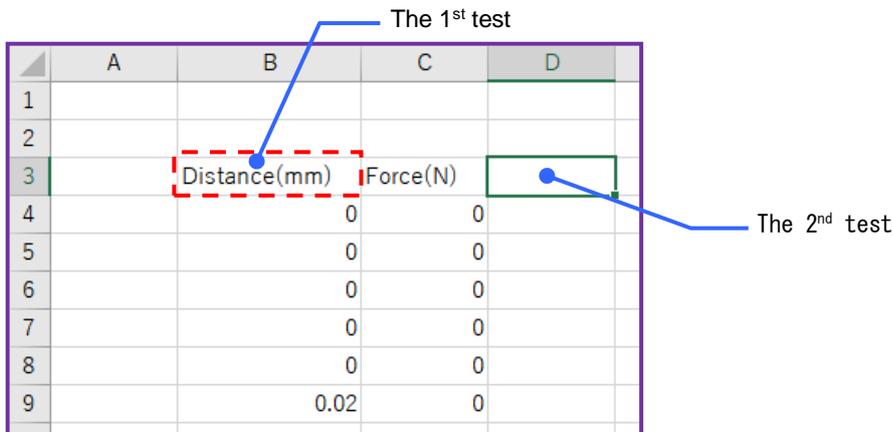
The sheet is named automatically "VC-(serial number)".



**Graph OFF**

Two or more tests are allocated in one sheet.

After a test is completed, the next row cell position is recorded for next test. If test is recorded at right end row, next test will make a new sheet, the sheet is named automatically "VC-(serial number)".



	IS	IT	IU	IV
1				
2	Distance(mm)	Force(N)	Distance(mm)	Force(N)
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0.01	0
9	0.06	0	0.07	0
10	0.12	0	0.13	0
11	0.23	0	0.22	0
12	0.3	0	0.31	0
13	0.42	0	0.41	0
14	0.5	0	0.52	0
15	0.61	0	0.64	0
16	0.73	0	0.76	0
17	0.88	0	0.88	0
18	0.98	0	1	0
19	1.13	0	1.13	0

If test is recorded at right end row, next test will make a new sheet, the sheet is named automatically "VC-(serial number)".

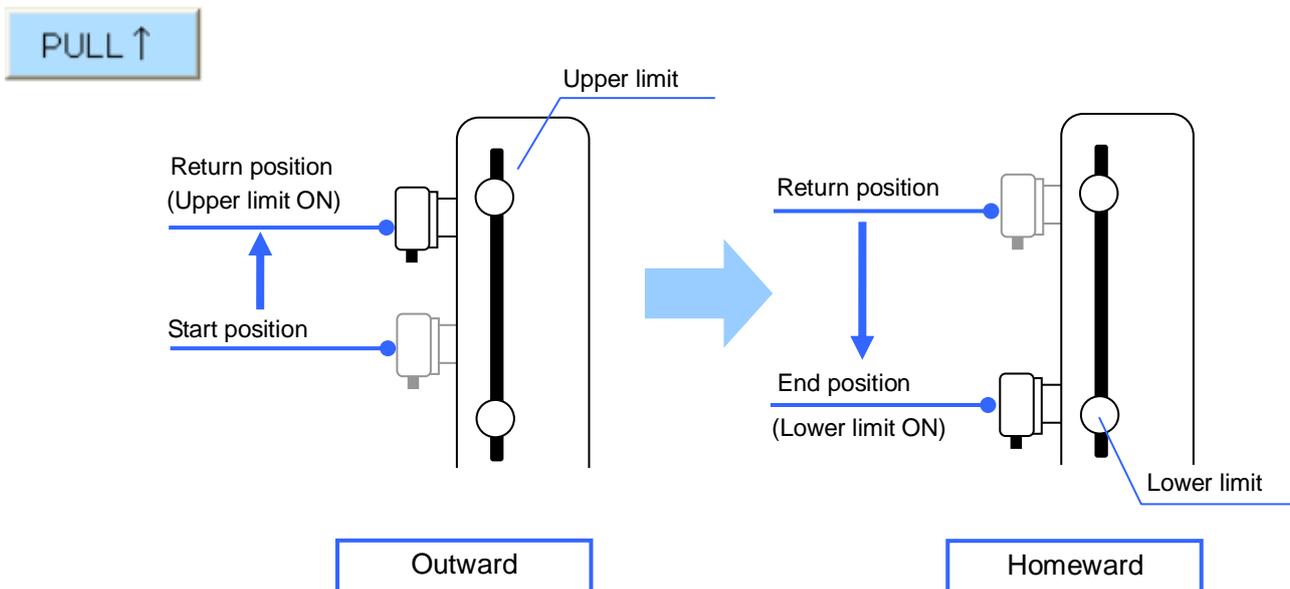
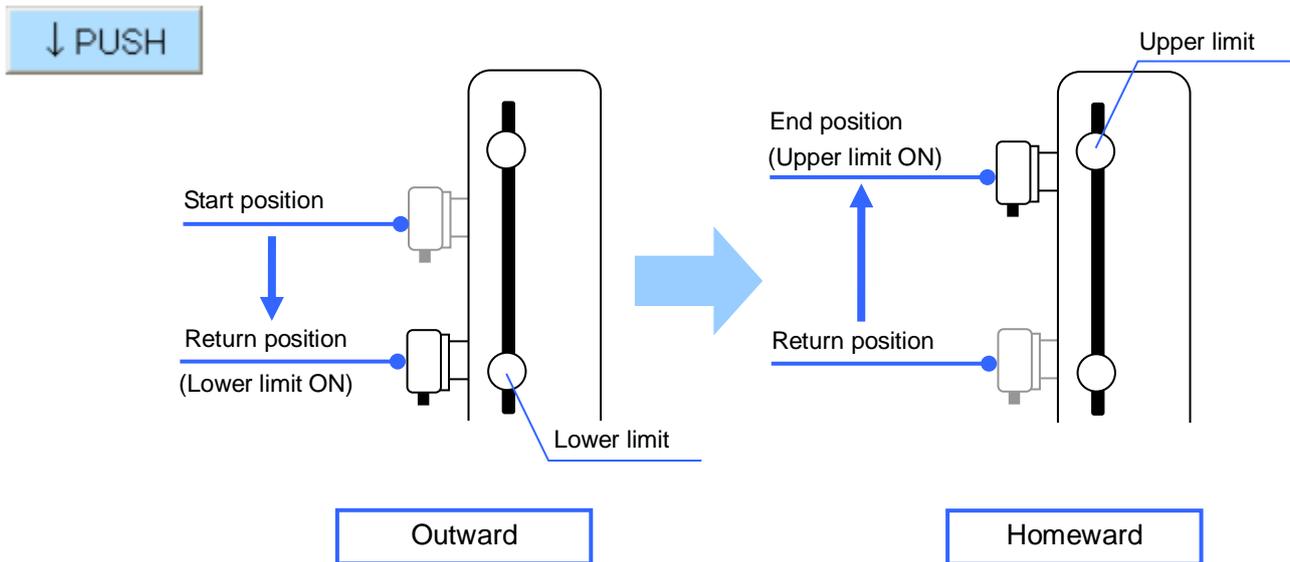
## 5.7. SING mode

### 5.7.1. Operation

This mode of operation is ideal for completing one cycle between manual distance limits. The test stand will only operate between the limits that are set by the test stand user.

The test stand will move downward or upward when the respective **PUSH** or **PULL** button is clicked.

The stand will continue to move until one of the following events occurs: the **STOP** button is clicked, one of the manual limit switches is tripped, the emergency reset button is pushed.



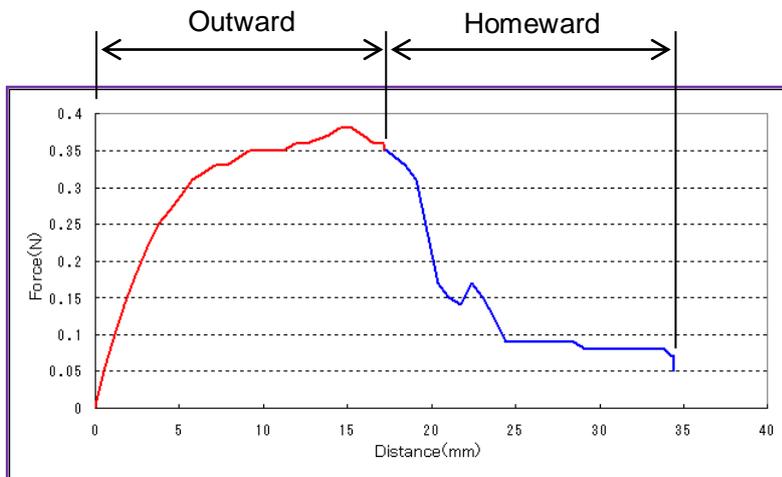
### 5.7.2. Record of Measurement Data

The record sheet is same as the previous MANU mode.

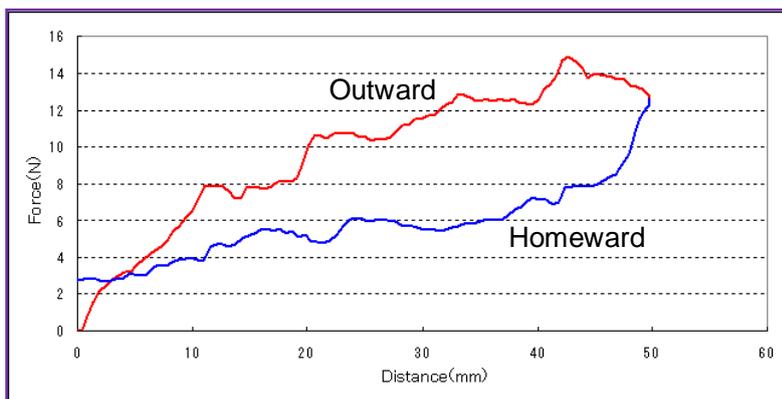
### 5.7.3. Graph

After the measurement is finished, the graph is made when the Graph check is ON.

The horizontal axis is distance, the vertical axis is force. The measurement data is recorded from start to end position, the data is indicated by red line in outward, blue line in homeward respectively.



Total Distance check button ON



Total Distance check button OFF

### 5.7.4. Sheet of each test

The record sheet is same as the previous MANU mode.

5.7.5. MAX-S Sheet

Only when the SING mode operates, the MAX-S seat is generated. The maximum force data of each operation is recorded in each line of MAX-S sheet. When the SING mode is operated at first time with the BOOK, a MAX-S sheet is made ahead current sheet. If only one MAX-S seat is made for one BOOK file.

1	Date	7/28/2018		
2				
3	Force Gauge	FG*-2		
4	Force Unit	N		
5				
6	Maximum	3.79		
7	Minimum	1.62		
8	Average	2.496		
9	Standard Deviator	0.889		
10				
11	Count	Sheet name	Distance(mm)	Maximum Force
12	1	<a href="#">VC-1</a>	70.47	1.62
13	2	<a href="#">VC-2</a>	30.07	3.32
14	3	<a href="#">VC-3</a>	44.69	3.79
15	4	<a href="#">VC-4</a>	23.57	2.05
16	5	<a href="#">VC-5</a>	8.1	1.7

The mounted force gauge type and the force unit

The statistical result against max force values

The indicated Maximum, Minimum, Average and Standard deviation are calculated by the maximum values of each test.

The maximum force value and the distance at that time

Maximum force value of each test

Test No.	Sheet	Distance (mm)	Maximum Value
1	<a href="#">VC-1</a>	70.47	1.62
2	<a href="#">VC-2</a>	30.07	3.32
3	<a href="#">VC-3</a>	44.69	3.79
4	<a href="#">VC-4</a>	23.57	2.05
5	<a href="#">VC-5</a>	8.1	1.7

The sheet name of the corresponding measurement  
Because the cell links the corresponding measurement sheet, it is possible to jump to the sheet by clicking.

The number of consecutive test

1	Date	7/28/2018		
2				
3	Force Gauge	FG*-2		
4	Force Unit	N		
5				
6	Maximum	3.79		
7	Minimum	1.62		
8	Average	2.496		
9	Standard Deviator	0.889		
10				
11	Count	Sheet name	Distance(mm)	Maximum Force
12	1	<a href="#">VC-1</a>	70.47	1.62
13	2	<a href="#">VC-2</a>	30.07	3.32
14	3	<a href="#">VC-3</a>	44.69	3.79
15	4	<a href="#">VC-4</a>	23.57	2.05
16	5	<a href="#">VC-5</a>	8.1	1.7
17				
18				



Each measurement sheet of SING mode

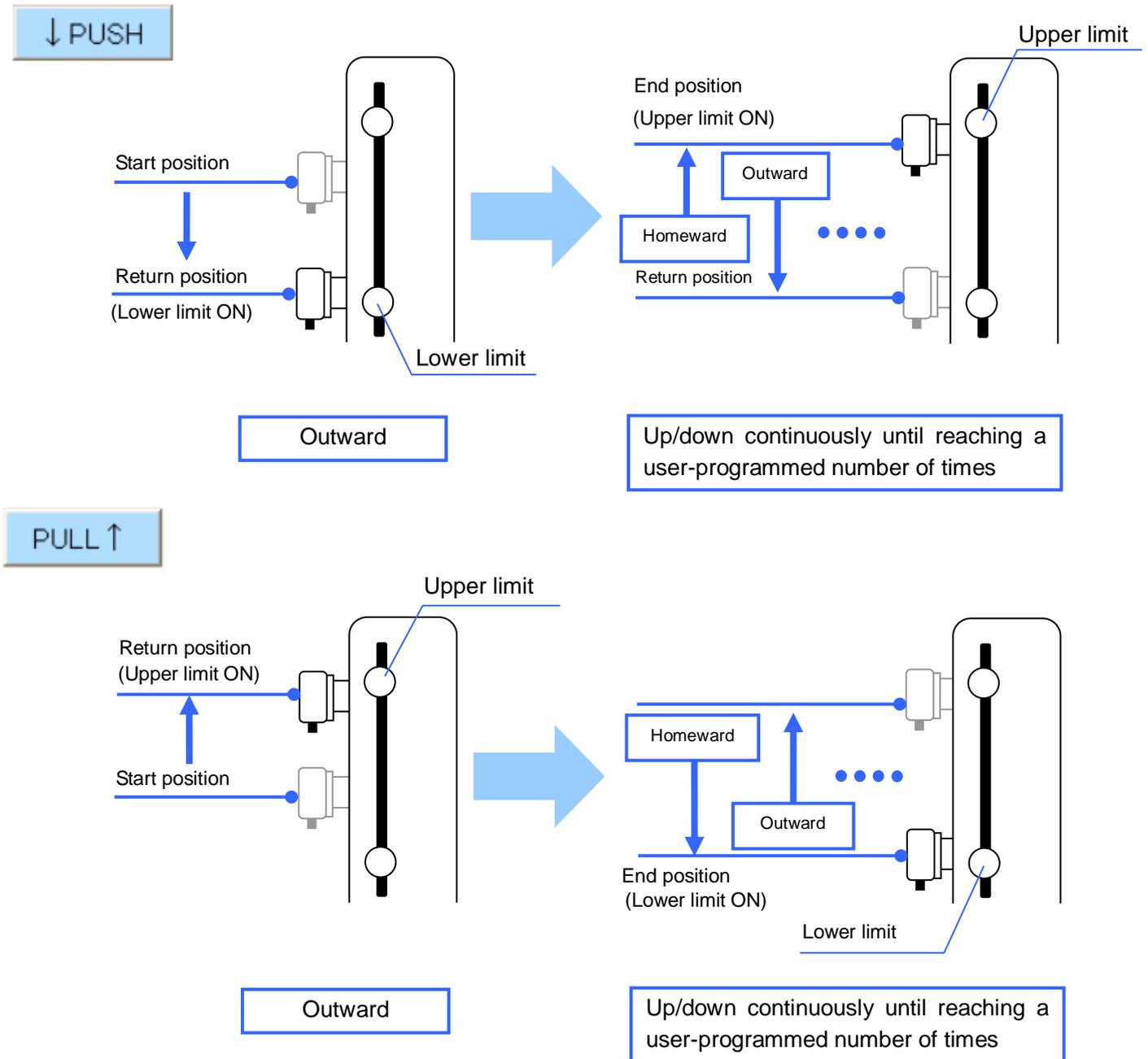
The "MAX-S" sheet is made for the head of the measurement sheets of SING mode

## 5.8. CONT mode

### 5.8.1. Operation

This mode of operation is ideal if the user wants the test stand to repeatedly cycle up and down continuously or for a user-programmed number of times. The stand will start in either direction depending on whether **PUSH** or **PULL** button is clicked.

The test stand will start to move downward or upward when the respective **PUSH** or **PULL** button is clicked. The stand will continue to move until one of the following events occurs: the **STOP** button is clicked, the emergency reset button is pushed.



### 5.8.2. Record of Measurement Data

The record sheet is as follows:

Graph ON		Graph OFF				
1	Date	7/27/2018 09:02:00	Distance(mm)	Force(N)		Header
2			0	0		
3	Direction	PUSH	0	0		
4	Test mode	CONT mode	0	0		
5	Force Gauge	FG*-2	0	0		
6	Force Unit	lbf	0	0		
7	Sampling Rate	50times/sec	0	0		
8	Repeat Count	1	0	0		
9	Sampling Number	1	0.01	0		
10	Trigger(Force)	0.567	0.07	0		
11	Number of data	378	0.14	0		
12	Maximum	1.169	0.22	0		
13	Minimum	0	0.31	0		
14	Average	0.7468	0.41	0		
15			0.52	0		
16	Upper limit	0	0.64	0		
17	Lower limit	0	0.75	0		
18	Result	Invalid				
19						
20	Count	1				
21	MAX Sheet	<a href="#">MAX-1</a>				
22						
23						
24	Distance(mm)	Force(lbf)				
25	36.91	0.567				
26	36.97	0.58				
27	37.01	0.588				
28	37.06	0.591				
29	37.1	0.593				

#### Sampling Number

The measurement sheets are made by the setting of the Sampling Number which is explained at chapter 5.5. measuring. In case of the measurement which is not recorded in the sheet, the maximum value only is recorded in the MAX sheet.

#### Count

The Count which is displayed in the header at Graph ON is how many times testing continuously.

#### MAX sheet

When the test is continuously done, the maximum value at each test is recorded in the MAX sheet line by line. The MAX sheet can be jumped because the measurement sheet links the MAX sheet.

Refer to the following clause for a detailed content.

#### Graph

In CONT mode, the graph is not made in the measurement sheet regardless of the setting of Graph ON/OFF.

5.8.3. MAX sheet

When the test is continuously done, the maximum value at each test is recorded in the MAX sheet line by line. The MAX sheet in the CONT mode is a  $\overline{FG} \square - 2$  rows.

	A	B	C	D
1	Date	7/28/2018		
2				
3	Force Gauge	FG*-2		
4	Force Unit	N		
5				
6	Maximum	3.38		
7	Minimum	1.18		
8	Average	2.354		
9	Standard Deviator	0.811		
10				
11	Repeat Count	5		
12	Sampling Number	5		
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
Count	Sheet name	Distance(mm)	Maximum Force	
27	1	<a href="#">VC-1</a>	11.18	2.88
28	2	<a href="#">VC-2</a>	23.7	2.67
29	3	<a href="#">VC-3</a>	23.71	1.66
30	4	<a href="#">VC-4</a>	47.42	1.18
31	5	<a href="#">VC-5</a>	10.89	3.38

The mounted force gauge type and the force unit

The statistical result against max force values

The indicated Maximum, Minimum, Average and Standard deviation are calculated by the maximum values of each test.

The Count and the Sampling Number are indicated by user-programmed value in FGS-VC.

The maximum force value and the distance at that time

Maximum force value of each test

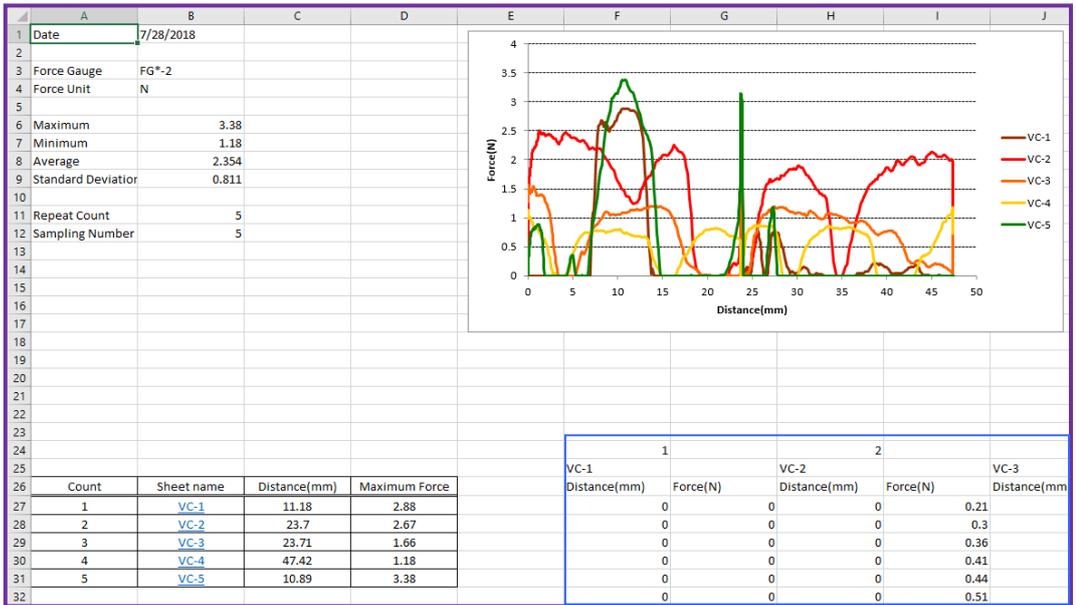
Test No.	Sheet	Distance (mm)	Maximum Value
1	<a href="#">VC-1</a>	11.18	2.88
2	<a href="#">VC-2</a>	23.7	2.67
3	<a href="#">VC-3</a>	23.71	1.66
4	<a href="#">VC-4</a>	47.42	1.18
5	<a href="#">VC-5</a>	10.89	3.38

The sheet name of the corresponding measurement  
Because the cell links the corresponding measurement sheet, it is possible to jump to the sheet by clicking.

The number of consecutive test

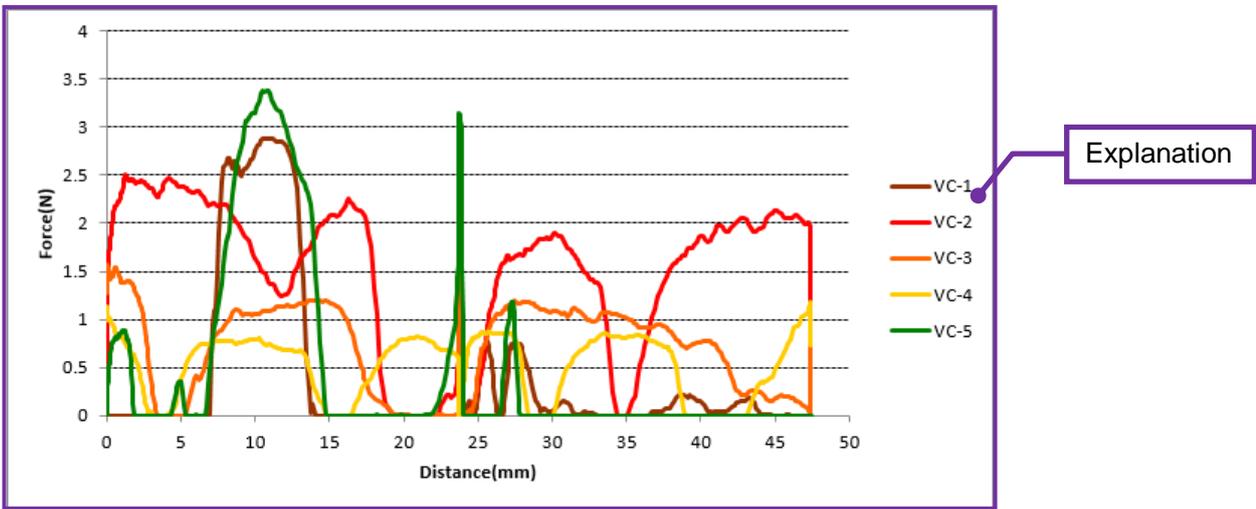
### 5.8.4. Graph of MAX sheet

When the Graph is ON, each measurement graphs is overwritten in the MAX sheet. In the graph, only ten measurement data from the first measurement is overwritten. The measurement data used for the graph is written under the graph (Measurement data for the overwritten graph).



Measurement data for the overwritten graph

Ten measurement data from the first measurement is overwritten



### 5.8.5. Sheet of each test

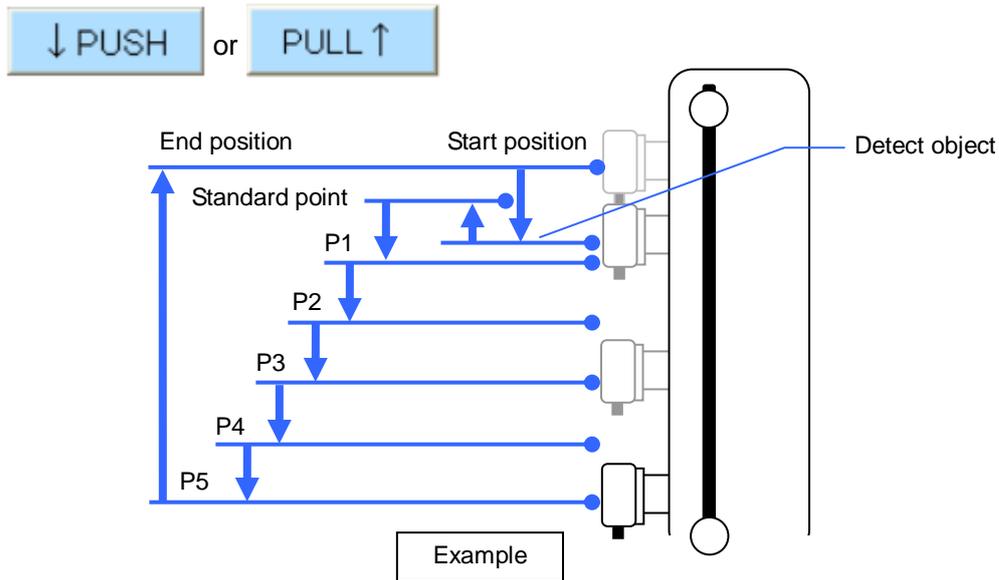
It is almost same as MANU mode, refer to 5.6.4. Sheet of each test. However, when beginning to operate in CONT mode, the MAX sheet is newly made.

## 5.9. PROG mode

### 5.9.1. Operation

This mode of operation is ideal if user wants the test stand to programmed complex moving (Refer to the FGS-VC instruction manual.)

The test stand will start to move and download measurement data when **PUSH** or **PULL** button is clicked. The parameter of the PROG mode can not be set in this software. The users should set the parameter by FGS-VC.



### 5.9.2. Record of Measurement Data

The record of the measurement data is same as CONT mode. In PROG mode, the measurement data is recorded from Standard point to P5.

### 5.9.3. Comparator

The comparator function is same as MANU mode. In PROG mode, the comparator is judged by the maximum force from Standard point to P5.

### 5.9.4. MAX sheet

The MAX sheet is same as CONT mode.

### 5.9.5. Graph of MAX sheet

It is same as CONT mode.

### 5.9.6. Sheet of each test

It is almost same as MANU mode, refer to 5.6.4. Sheet of each test. However, the MAX sheet is newly made at each completing repeat count.

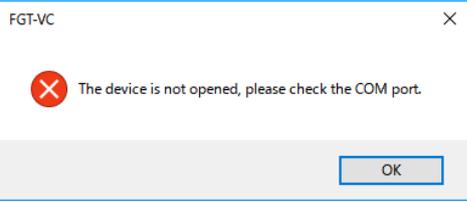
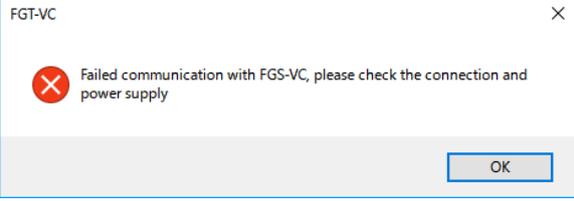
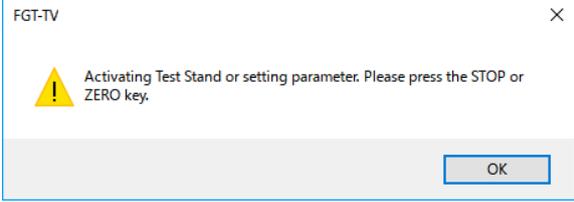
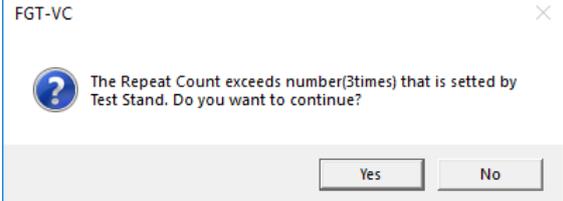
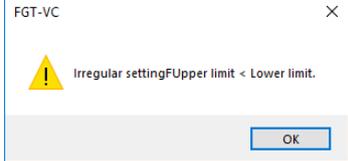
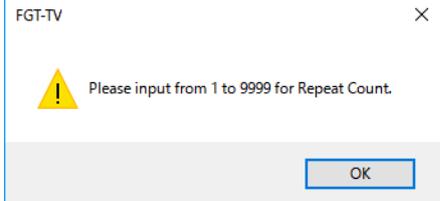
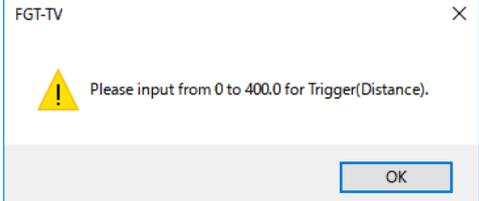
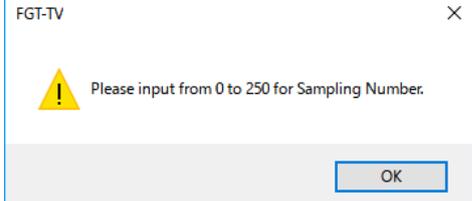
## 6. Input Range

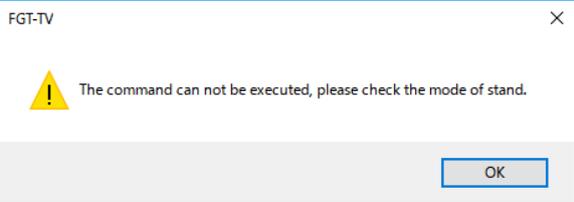
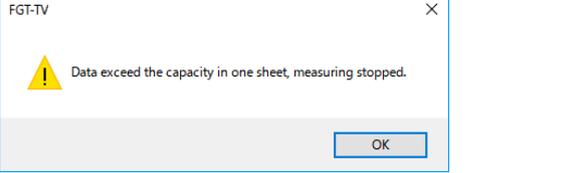
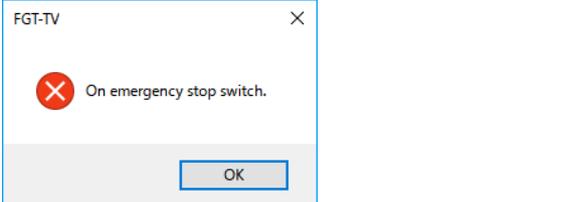
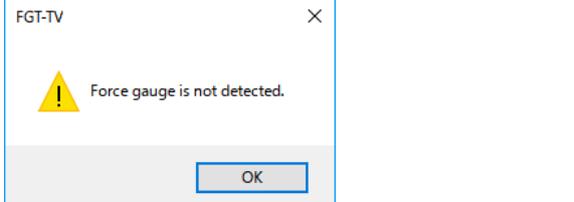
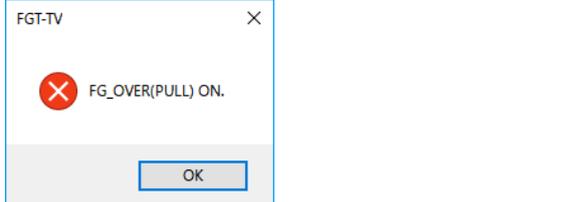
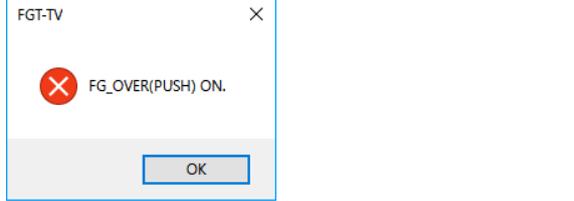
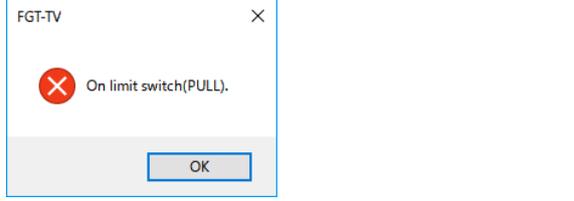
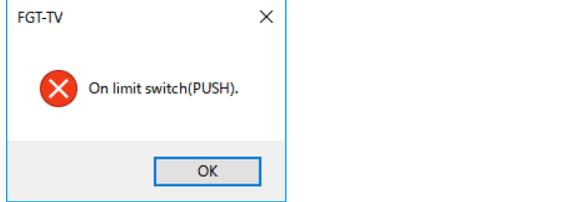
The input range of force depends on the mounted force gauge.

The range of each force gauge is follows:

Model	Unit	Upper limit	Lower limit	Trigger
FG * -0.2	N	0 – 2.000		
	gf	0 – 200.0		
	lbf	0 – 0.500		
	ozf	0 – 8.000		
FG * -0.5	N	0 – 5.000		
	gf	0 – 500.0		
	lbf	0 – 1.000		
	ozf	0 – 16.00		
FG * -1	N	0 – 10.00		
	gf	0 – 1000		
	lbf	0 – 2.000		
FG * -2	N	0 – 20.00		
	kgf	0 – 2.000		
	lbf	0 – 5.000		
FG * -5	N	0 – 50.00		
	kgf	0 – 5.000		
	lbf	0 – 10.00		
FG * -10	N	0 – 100.0		
	kgf	0 – 10.00		
	lbf	0 – 20.00		
FG * -20	N	0 – 200.0		
	kgf	0 – 20.00		
	lbf	0 – 50.00		
FG * -50	N	0 – 500.0		
	kgf	0 – 50.00		
	lbf	0 – 100.0		
FG * -100	N	0 – 1000		
	kgf	0 – 100.0		
	lbf	0 – 200.0		
FGPX-250H	N	0 – 2500		
	kgf	0 – 250.0		
	lbf	0 – 500.0		

## 7. Message of Error

 <p>FGT-VC</p> <p> The device is not opened, please check the COM port.</p> <p>OK</p>	<p>The device is not opened. Please check the COM port. Refer to 4.4. Confirmation of COM Port.</p>
 <p>FGT-VC</p> <p> Failed communication with FGS-VC, please check the connection and power supply</p> <p>OK</p>	<p>Failed communication with FGS-VC and your PC. Please check the connection of the USB cable. Please check the power ON of the stand.</p>
 <p>FGT-TV</p> <p> Activating Test Stand or setting parameter. Please press the STOP or ZERO key.</p> <p>OK</p>	<p>The stand is operating in alone or the mode of the stand is the parameter setting mode. Please stop the operation of the stand by STOP, or exit the parameter setting mode.</p>
 <p>FGT-VC</p> <p> The Repeat Count exceeds number(3times) that is setted by Test Stand. Do you want to continue?</p> <p>Yes No</p>	<p>The repeat count of PC is larger than FGS-VC. In this case FGS-VC starts to measure, however please note that the repeat count can be executed only until the setting repeat count of FGS-VC.</p>
 <p>FGT-VC</p> <p> Irregular setting Upper limit &lt; Lower limit.</p> <p>OK</p>	<p>The Upper limit is smaller than the Lower limit. The Upper limit should be equal or larger than the Lower limit.</p>
 <p>FGT-TV</p> <p> Please input from 1 to 9999 for Repeat Count.</p> <p>OK</p>	<p>Exceeding the input range of the Repeat Count. The range is from 1 to 9999.</p>
 <p>FGT-TV</p> <p> Please input from 0 to 400.0 for Trigger(Distance).</p> <p>OK</p>	<p>The Trigger is wrong. The setting value of trigger distance should be from 1 to 400.0.</p>
 <p>FGT-TV</p> <p> Please input from 0 to 250 for Sampling Number.</p> <p>OK</p>	<p>When the Graph is ON, the Sampling Number should be from 0 to 250.</p>

	<p>The stand can not be operated. Please confirm the operation mode of the stand. The mode should be MANU, SING, CONT or PROG mode.</p>
	<p>The number of measuring data that can be recorded on the sheet is exceeded. Please make a new Book file or sheet.</p>
	<p>The emergency switch of the stand is turning on. Please conform be safe even if the emergency turns off. Then please turn the emergency switch off.</p>
	<p>Please check the force gauge is power on. Please confirm the connection with the stand and the force gauge.</p>
	<p>The overload of PULL direction is occurred. Please move to PUSH direction to release the overload.</p>
	<p>The overload of PUSH direction is occurred. Please move to PULL direction to release the overload.</p>
	<p>The PULL limit switch is turning on. Please move to PUSH direction, or adjust the position of the PULL limit switch.</p>
	<p>The PUSH limit switch is turning on. Please move to PULL direction, or adjust the position of the PULL limit switch.</p>

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## NIDEC DRIVE TECHNOLOGY CORPORATION

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