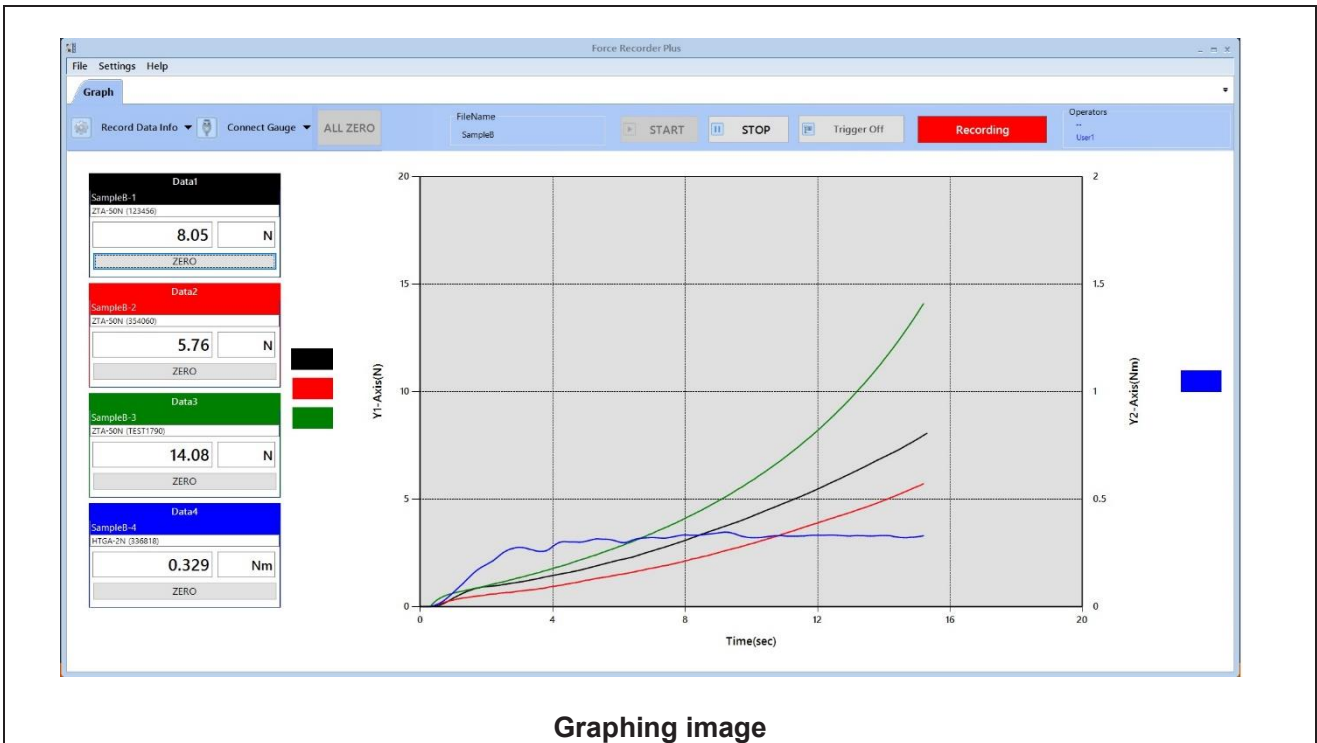


# Multiple Force-Time (Torque-Time) Graphing Software

## Force Recorder Plus

- Data Graphing of up to 4pcs devices simultaneously
- Displays different units (eg: force N and torque Nm) on the same window
- Up to 10 graphs can be overlaid for visual analysis
- Operation history tracking and password protection possible for security



Force Recorder Plus-08-22-Subject to change without notice.

### Application images

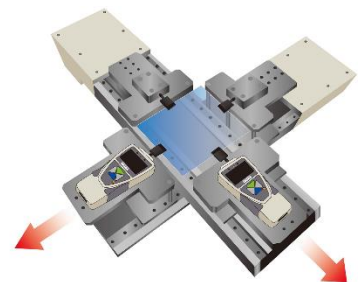
-Data graphing of multiple devices simultaneously



-Test torque and force simultaneously



-Data analysis of force from 2 directions on 1 sample



<b>Common functions of Force Recorder Series</b>	
<b>Graph scaling function</b>	The graph can be zoomed in/out, or scroll to check the details.
<b>Statistical calculation</b>	Max/min/average values are automatically calculated.
<b>Print</b>	Graph and statistics value can be printed out as report format.
<b>CSV file converting function</b>	Recorded data can be converted into CSV format.
<b>Preview saving function</b>	Graph can be saved in various format. (e.g. Word, Excel and PDF)
<b>Device setting</b>	The setting of device can be changed via software.

<b>Main functions of Force Recorder Plus</b>	
<b>Data graphing of multiple devices</b>	It can graph data of up to 4pcs devices simultaneously.
<b>Display different units / ranges</b>	Different units (eg: force and torque) / ranges (eg: 5N and 5000N) can be displayed on the same window by setting the Y1-Axis and Y2-Axis.
<b>Graph overlay</b>	Up to 10 graphs can be overlaid for visual analysis.
<b>Trigger function</b>	Data from multiple devices can be recorded automatically at the same time by setting up the START/STOP value.
<b>Area select function</b>	Extract the desired part of the graph, then the new statistical value will be calculated.
<b>Average and total value display as graph</b>	When overlay the graphs, the average and total value of all the graphs can be displayed as graph.
<b>Management of devices</b>	Register each device by its serial No., and manage its name and calibration date, etc.
<b>Operation history tracking</b>	Operation history can be recorded by log settings.
<b>Password function</b>	To avoid unnecessary login, user ID and password is required when login.

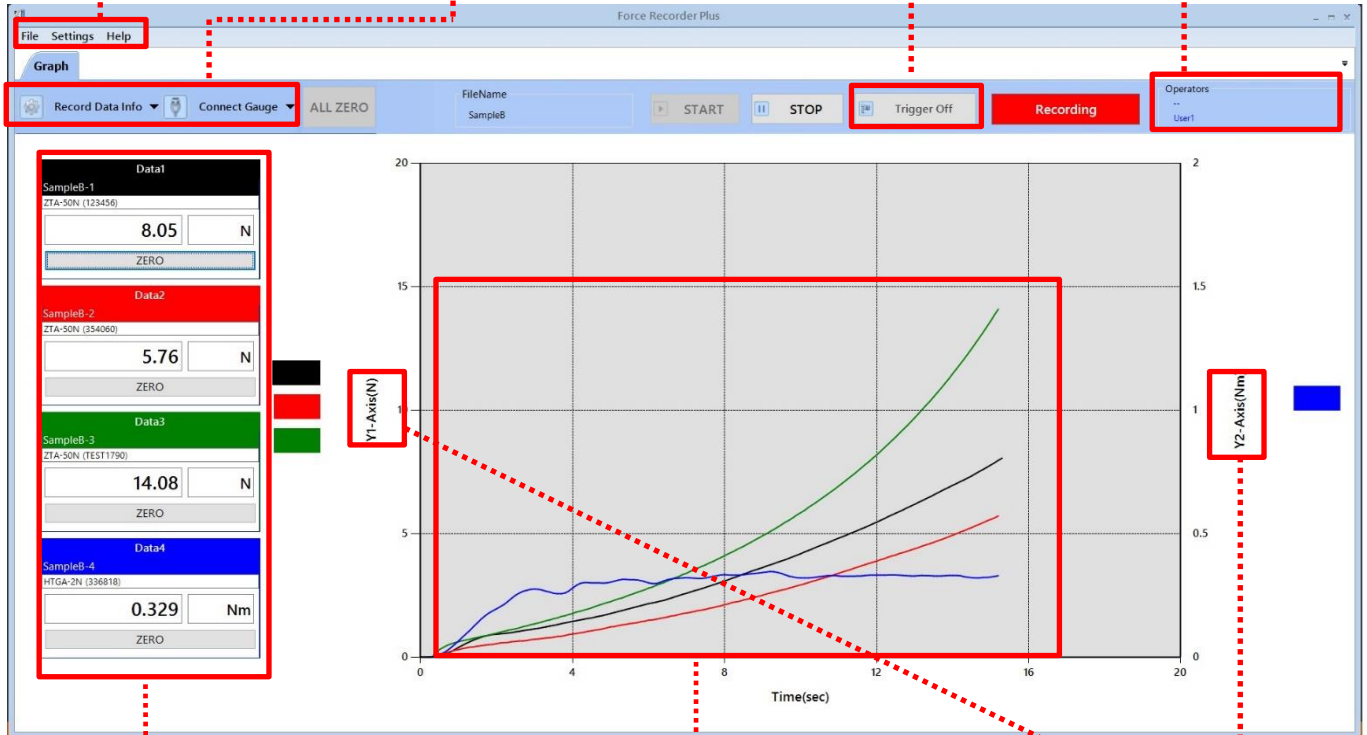
**[Main window]**

**Main Toolbar**  
Open/close files and edit the settings.

**Record settings**  
Data record file set and connect/manage the devices.

**Trigger function**  
Automatic record by setting up the START/STOP value.

**Operators display**  
Display operator's name and dept. (only when operator login).



**Real-time values of multiple devices**  
The real-time values of connected devices can be observed.

**Data graphing of multiple devices**  
Graph data of up to 4pcs devices simultaneously.

**Display different units**  
Different units such as force and torque can be displayed on the same window.

## [Graph viewing window]

### Tab Toolbar

Save/edit/zoom the data and graph.  
Graph viewing buttons

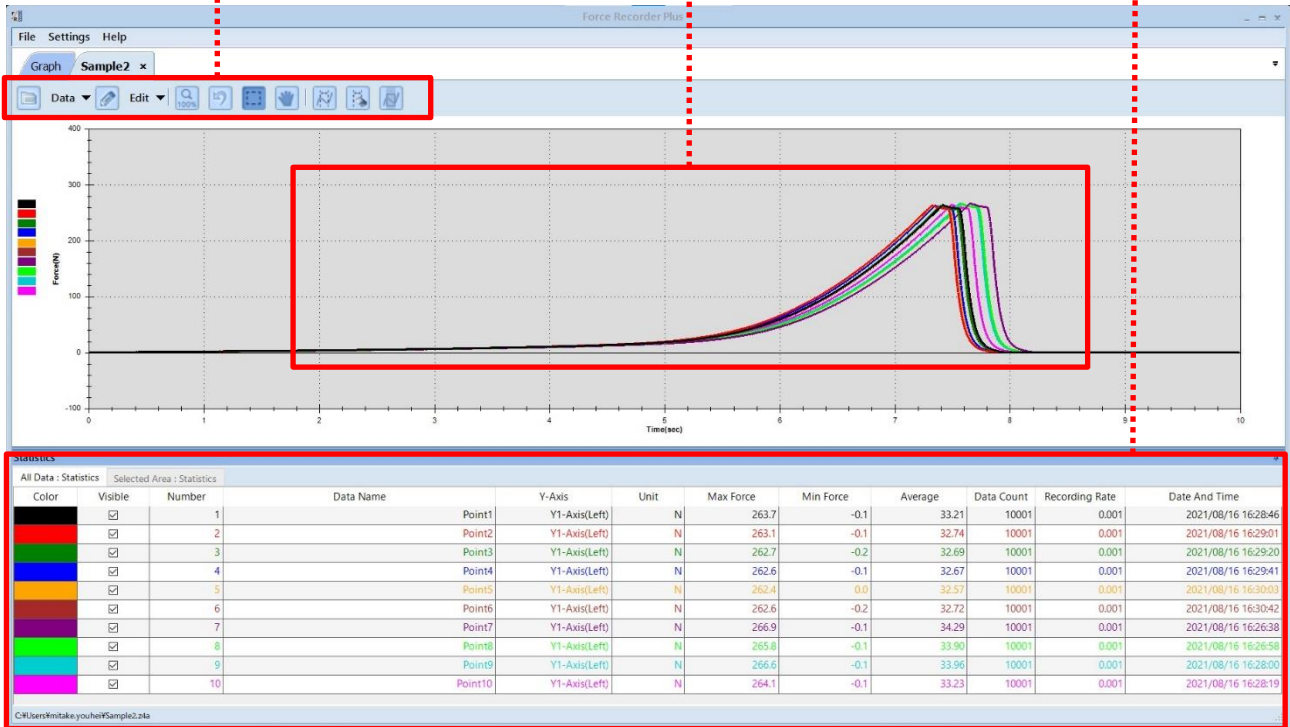


### Graph overlay

Up to 10 graphs can be overlaid for visual analysis.

### Statistics display

Shows statistics including the Max, Min, and Ave. values.



## [Management of devices]

### Device registration

Automatic registration of its serial No. and model.

### Detailed information

Enables you to input its name, responsible person and department.

### Calibration information

Allows calibration date registration.

### Note

Notes such as repair records can be input.

### Edit

Allows revision of registered contents. (\*)

The screenshot shows the 'Manage Gauge' window. It contains a table with the following data:

Model	Serial No.	Name	Data No.	Department	Manager	Purchase Date	Calibration Schedule	Note
HIGS-10N	355227	For Checking	1	Development	Jack	2021/07/12	2022/07/29	
ZTS-20N	353085	Left	1	Manufacturing #1	Andrew	2021/08/26	2022/01/06	Repaired
ZTA-50N	354060	Grace Only	2	Top measurement	Grace	2021/08/26	2022/01/27	Grace Only
ZTS-20N	000000	Material #2	3	Research	Mike	2021/07/15	2022/03/25	
ZTA-50N	123456	For Manager	4	Group #1	Johnson	2021/07/12	2023/03/01	Maintainence

Below the table are buttons for 'Delete', 'Edit ...', 'Export ...', and 'Close'. A red box highlights the 'Edit ...' button.

\*This button is displayed only administrator login.

## [Main Functions]

Force-Time (torque-time) Graphing	Graph Analyzing
<p>1. Simply press START/STOP buttons for recording.</p> <div data-bbox="268 347 687 436" data-label="Image"> <p>Two buttons: 'START' with a play icon and 'STOP' with a pause icon.</p> </div> <p>(Start/Stop buttons)</p> <p>2. It is easy to see force transitions as the real-time values and graphing are displayed on the same window.</p> <div data-bbox="252 577 687 813" data-label="Figure"> <p>A screenshot of the software interface showing a graph with multiple colored lines (blue, green, red) and a data table on the left side.</p> </div> <p>(Graphing image)</p> <p>3. Data from multiple devices can be recorded automatically according to the set value. (Trigger function) * e.g. The software will start recording when force reaches 1N, and stop after 10 sec.</p>	<p>1. Extract the desired part of the graph, and the new statistical value will be calculated. (Area select function)</p> <p>2. Adjust the starting position of the graph for easy comparison by using shift graph line function.</p> <div data-bbox="821 544 1401 817" data-label="Figure"> <p>A screenshot of the software interface showing a graph with multiple colored lines and a 'Shift Graph Line' dialog box.</p> </div> <p>(Shift graph line)</p>
Graph Viewing	Output and Print
<p>1. You can zoom in/out or scroll easily to check the details of the recorded graph. (Graph scaling function)</p> <div data-bbox="260 1160 687 1220" data-label="Image"> <p>A row of icons for zooming (magnifying glass), scrolling (hand), and other graph viewing functions.</p> </div> <p>(Graph viewing buttons)</p> <p>2. Up to 10 graphs can be overlaid for visual analysis. (Graph overlay function)</p>	<p>1. Print the graph and statistical values in report format.</p> <p>2. Select and enlarge the desired area of graph and paste to the clipboard.</p> <p>3. Recorded data can be converted into CSV format. (CSV file converting function)</p>

Force Recorder Series Main Functions Comparison				
Model	Light	Standard	Professional	Plus
Feature	Graphing only	With editing functions	Force-displacement graphing	Multiple graphing
Graphing	Force-time	Force-time	Force-time / displacement	Force-time
Data transferring speed (Max)	2000 data/sec	2000 data/sec	2000 data/sec	1000 data/sec
Recording data point (Max)	7.2 million	7.2 million	7.2 million	0.3 million
Displacement output	N/A	N/A	√	N/A
Graph overlaying	N/A	√ (Max 5)	√ (Max 5)	√ ((Max 10)
Trigger function	N/A	√	√	√
Point marking	N/A	√	√	N/A
Border line function	N/A	√	√	N/A
Capture function	N/A	√	√	√
Graph scaling	√ (Automatic)	√ (Automatic)	√ (Automatic)	√ (Automatic and Manual)
Statistics output	√	√	√	√
Comment	√	√	√	N/A
Print	√	√	√	√
CSV file converting	√	√	√	√
Preview saving (PDF/Word/Excel)	√	√	√	√
Force gauge setting	√	√	√	√
Operation history tracking	N/A	N/A	N/A	√
Password	N/A	N/A	N/A	√

\* Refer to the specification of each product for details.

Specifications	
Model	<b>Force Recorder Plus</b>
Data transferring speed (Max)	1000 data/sec
Resolution	Determined by force gauge's capacity. (Signed 4-digit) (eg: 0.001N when using 5N range.)
Output	CSV format conversion, Printing
Languages	Japanese, English
Compatible devices	Digital Force-gauges: ZTS/ZTA series Digital Torque-gauges: HTGS/HTGA series, DTXS/DTXA series Desktop Amplifier: FA Plus2 series Sensor Interchangeable Amplifier: eZT、eFA Plus2
Required cable	Supplied USB cable for force gauge






\* USB hub is required when using multiple devices simultaneously.

Connect Devices NO.	USB hub type	Notes
1~2 pcs	Self-powered type or bus-powered type	Supply current per port: 250mA or higher
3~4 pcs	Bus-powered type	

Operating Environment	
<b>Model</b>	Force Recorder Plus
<b>Operating environment</b>	Windows 8.1/10/11
<b>Hardware</b>	CPU : 1GHz or higher Memory : 4GB or more Hard disk : 10GB (Data Storage) or larger
<b>Platform</b>	.NET Framework4.8 or higher
<b>Image size</b>	Resolution 1920x1080 pixel or greater (*1)

\*1 For Windows10, you may need to adjust the resolution if it is not displayed properly.

\* 2 We do not guarantee operation in USB 3.0.

Compatible Devices For Force-Time (Torque-Time) graph		
Digital Force Gauge <b>ZTS/ZTA series</b>	Sensor Interchangeable Amplifier <b>eZT</b>	Desk Type Load Cell Amplifier <b>FA Plus2/eFA Plus2</b>
		
For Torque-Time graph		
Handy Type Torque Gauge <b>HTGS/HTGA series</b>	Screw Cap Torque Tester <b>DTXS/DTXA series</b>	
		

Related Products	
Motorized Test Stand <b>MX/MX2/MH/MH2/EMX series</b>	Optional Cable <b>CB-528</b>
The motorized test stand can be operated by switch to perform measurement.	By combining with ZT series force gauge and test stand, it activates the motion control and overload-preventing functions.
