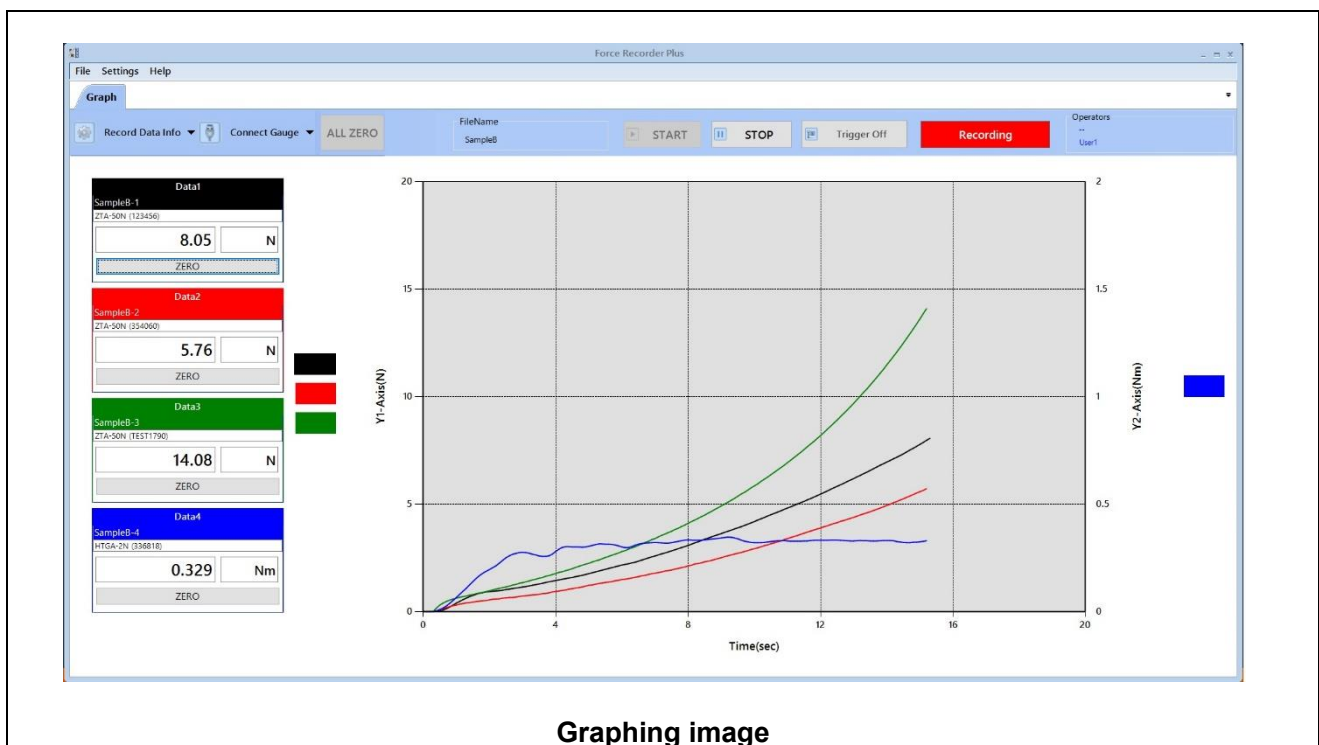


# Multiple Force-Time (Torque-Time) Graphing Software

## 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

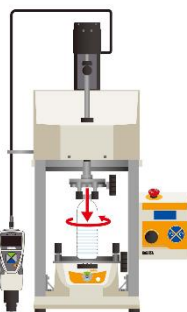


### Application images

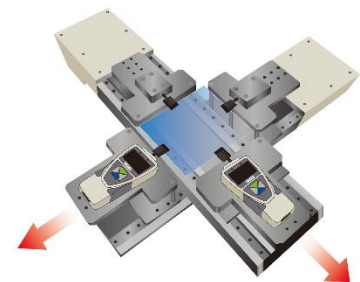
-Data graphing of multiple devices simultaneously



-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.

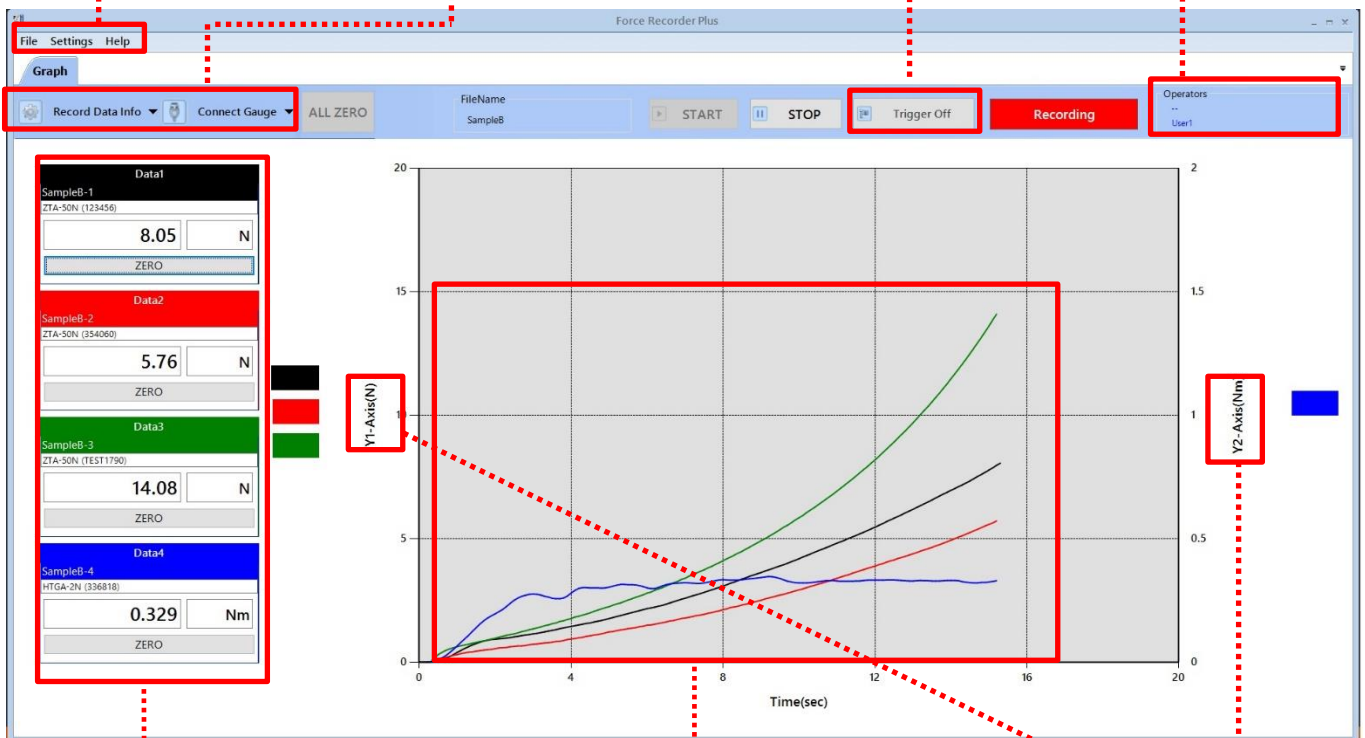
**[Main window]**

**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.

Color	Visible	Number	Data Name	Y-Axis	Unit	Max Force	Min Force	Average	Data Count	Recording Rate	Date And Time
Black	<input checked="" type="checkbox"/>	1	Point1	Y1-Axis(Left)	N	263.7	-0.1	33.21	10001	0.001	2021/08/16 16:28:46
Red	<input checked="" type="checkbox"/>	2	Point2	Y1-Axis(Left)	N	263.1	-0.1	32.74	10001	0.001	2021/08/16 16:29:01
Green	<input checked="" type="checkbox"/>	3	Point3	Y1-Axis(Left)	N	262.7	-0.2	32.69	10001	0.001	2021/08/16 16:29:20
Blue	<input checked="" type="checkbox"/>	4	Point4	Y1-Axis(Left)	N	262.6	-0.1	32.67	10001	0.001	2021/08/16 16:29:41
Orange	<input checked="" type="checkbox"/>	5	Point5	Y1-Axis(Left)	N	262.4	0.0	32.57	10001	0.001	2021/08/16 16:30:03
Purple	<input checked="" type="checkbox"/>	6	Point6	Y1-Axis(Left)	N	262.6	-0.2	32.72	10001	0.001	2021/08/16 16:30:42
Brown	<input checked="" type="checkbox"/>	7	Point7	Y1-Axis(Left)	N	266.9	-0.1	34.29	10001	0.001	2021/08/16 16:26:38
Cyan	<input checked="" type="checkbox"/>	8	Point8	Y1-Axis(Left)	N	265.8	-0.1	33.90	10001	0.001	2021/08/16 16:26:58
Magenta	<input checked="" type="checkbox"/>	9	Point9	Y1-Axis(Left)	N	266.6	-0.1	33.96	10001	0.001	2021/08/16 16:28:00
Pink	<input checked="" type="checkbox"/>	10	Point10	Y1-Axis(Left)	N	264.1	-0.1	33.23	10001	0.001	2021/08/16 16:28:19

**[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.

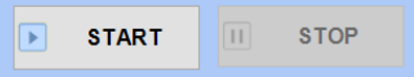
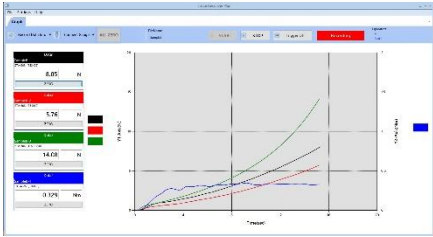
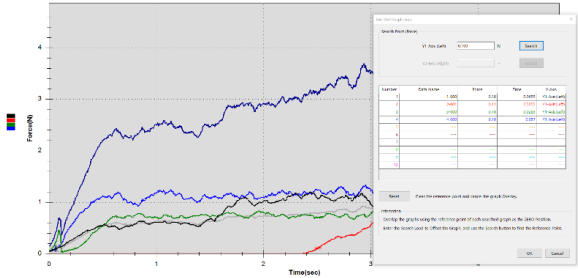

Model	Serial No.	Name	Data No.	Department	Manager	Purchase Date	Calibration Schedule	Note
HTGS-10N	355227	For Checking	1	Development	Jack	2021/07/12	2022/07/29	
ZTS-20N	353085	Left	1	Manufacturing #1	Andrew	2021/08/26	2022/01/06	Repaired
ZTA-50N	354060	Grace Only	2	Top measurement	Grace	2021/08/26	2022/01/27	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	Maintainenc

**Note**  
Notes such as repair records can be input.

**Edit**  
Allows revision of registered contents. (\*)

\*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>  <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>  <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>  <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>  <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	
<b>Motorized Test Stand</b> <b>MX/MX2/MH/MH2/EMX series</b>	<b>Optional Cable</b> <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.
	

**[Cautions]**

- Information in this document is subject to change without prior notice.
- This document is product descriptions and handling precautions, and do not guarantee various characteristics or safety.
- This product is designed for force measurement purpose only.
- Do not copy and use this content without authorization.
- A force gauge (sold separately) is required to use this product.
- This product is protected by Universal Copyright Convention and Japanese Copyright Act.
- Returns are not acceptable. Check the specification, working conditions and operating environment before purchase.

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