Nidec
All for dreams

364-24-007

Digital Force Gauge

FGPX/FGP/FGV-XY/FGV-HXY Series Software

Compatible with Windows 10 or later

TORIEMON-S

Instruction Manual

Please read this manual carefully

To ensure proper operation, review this manual and the instruction manual for the FGPX/FGP/FGV-XY/FGV-HXY Digital Force Gauges thoroughly before using the product.

NIDEC DRIVE TECHNOLOGY CORPORATION

- Contents -

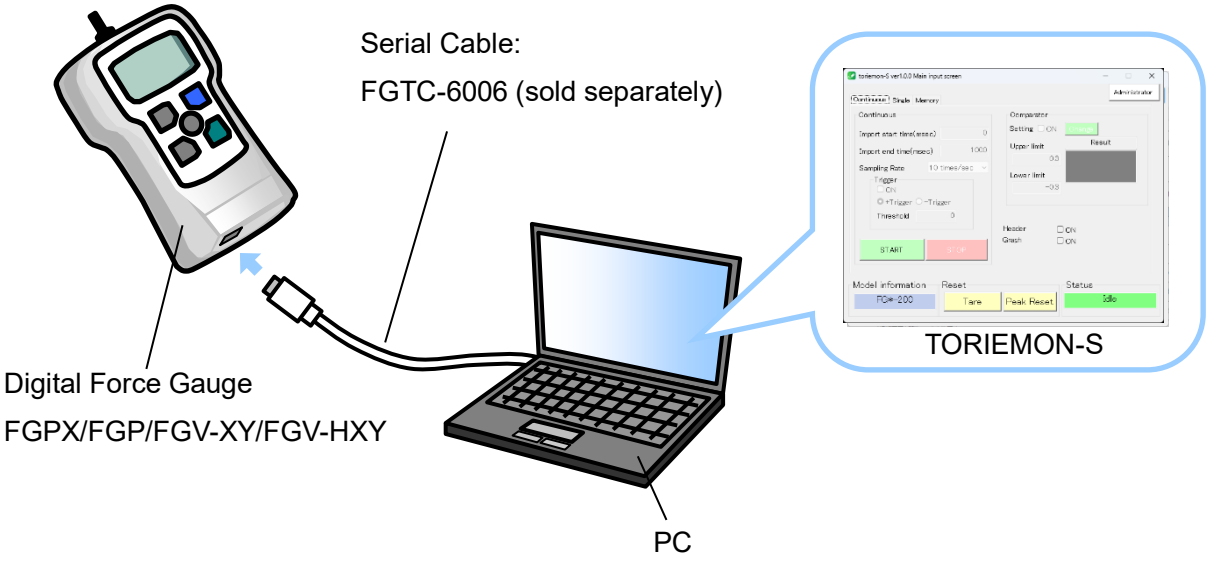
1. Before Use

Thank you for choosing NIDEC's dedicated software, "TORIEMON-S" designed exclusively for the FGPX/FGP/FGV-XY/FGV-HXY series Digital Force Gauges.

TORIEMON-S (referred to as "this software") is specifically tailored for seamless use with the FGPX/FGP/FGV-XY/FGV-HXY-☐ series Digital Force Gauges (referred to as "Force Gauge").

For comprehensive details about the Force Gauge, please refer to the device instruction manual.

2. Configuration



Operating Environment
• Microsoft Windows® 10 or later*

* Ensure the Digital Force Gauge is powered ON before connecting the serial cable to the computer's RS-232C serial port (D-sub 9-pin).

For computers without a serial port, a commercially available serial-to-USB adapter can be used to connect through a USB port.

[For Reference] Examples of Commercially Available Adapters (Note: The Company cannot guarantee compatibility).

- I-O DATA DEVICE, INC. Serial Conversion Adapter Model: USB-RSAQ6 Series
- BUFFALO INC. USB Serial Conversion Cable Model: BSUSRC06 Series

* While operating TORIEMON-S, turning OFF the Force Gauge or modifying settings such as upper/lower limit comparator values or memory mode configurations may result in incorrect measurement displays. Exercise caution during operation.

* Microsoft and Windows are registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.

3. Setup

Before using TORIEMON-S, the software must be properly installed.

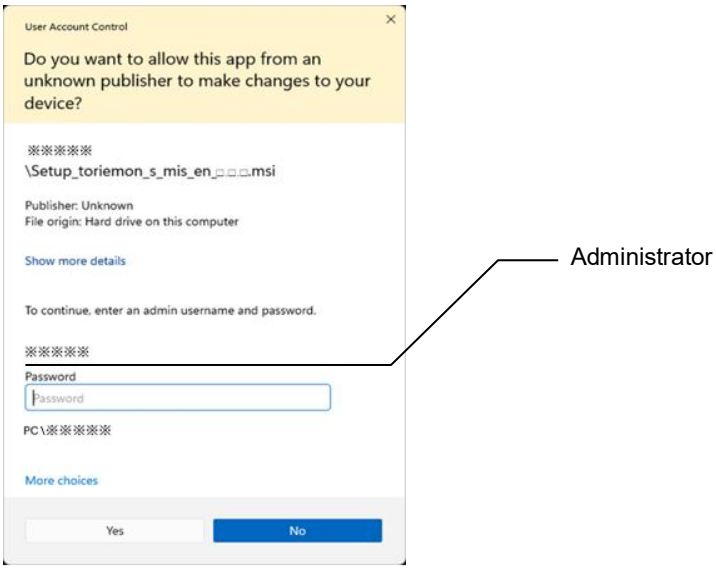
Ensure that installation is performed while logged into an account with administrator access rights.

● Installing with Standard User Access Rights

If installation is attempted from an account without administrator access rights, the following prompt will appear during the installation process.

If a password has been set for the administrator account, enter the password and click [Yes] to continue with the installation.

* If no password has been set, leave the password field blank and click [Yes] to continue.



3.1. Extracting the Downloaded File

Run the file “NDTC-toriemon-S-mis_en_download_v***.zip” downloaded from the Company’s website to extract the following contents to the specified location.

* Version information is given in the *.*.* part.

- Setup_toriemon_s_mis_en_*.*.*.msi
- MIS-toriemon-S_Instruction_Manual_ENG.pdf
- MIS-toriemon-S_Instruction_Manual_USA.pdf

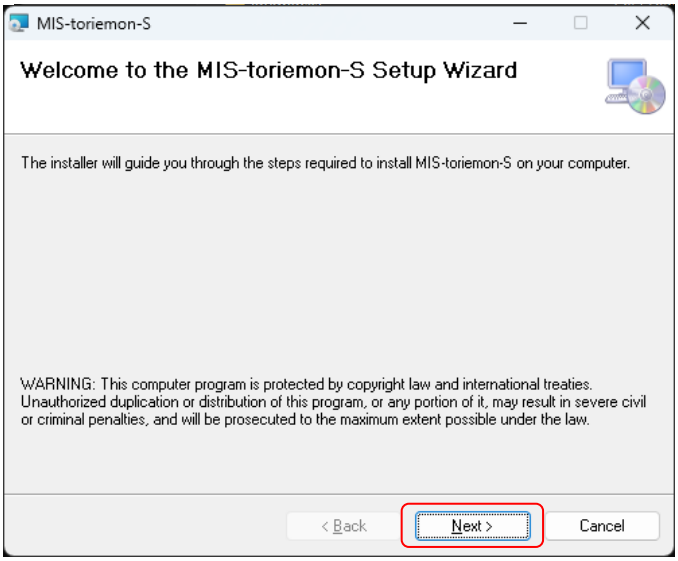
3.2. Installing TORIEMON-S

To start the installation, double-click the installation package “Setup_toriemon_s_mis_en_*.*.*.msi” located in the folder where the downloaded file was extracted.

* Version information is given in the *.*.* part.

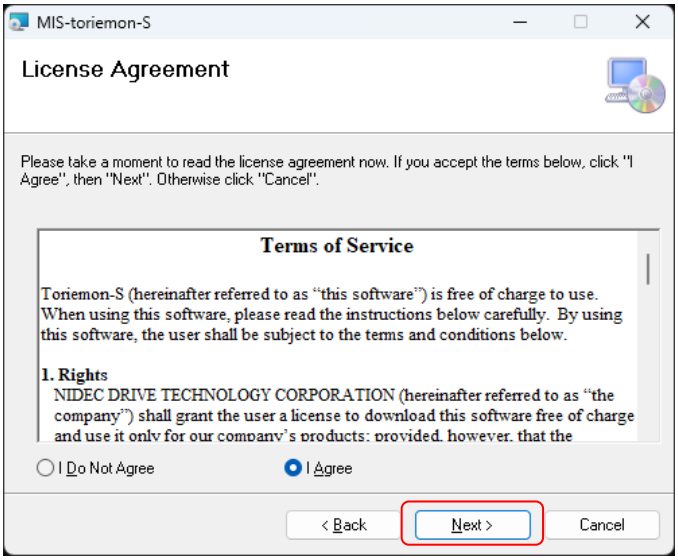
Setup_toriemon_s_mis_en_*.*.*.msi ①

Double-click



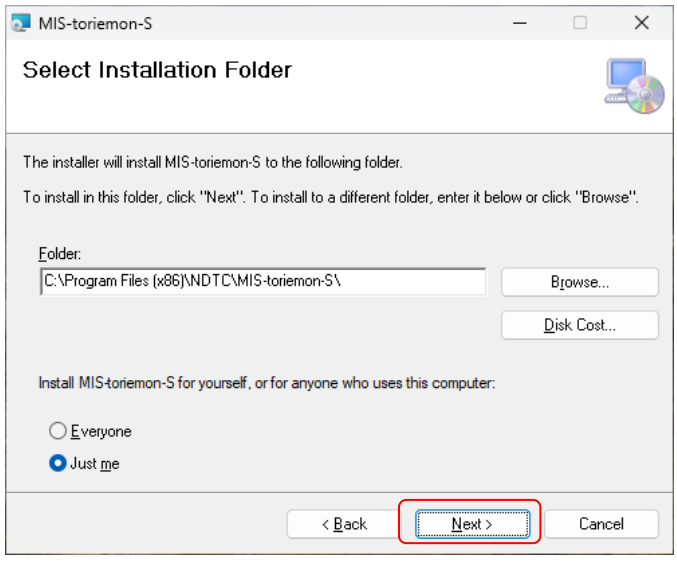
Click [Next] to proceed to the following

②



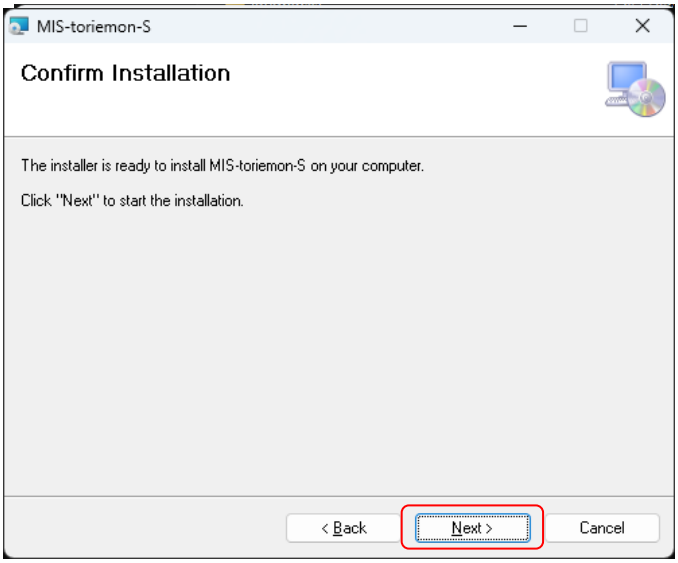
Carefully review the terms and conditions. If the terms are acceptable, check “I Agree” and click [Next] to proceed to the next screen.

③



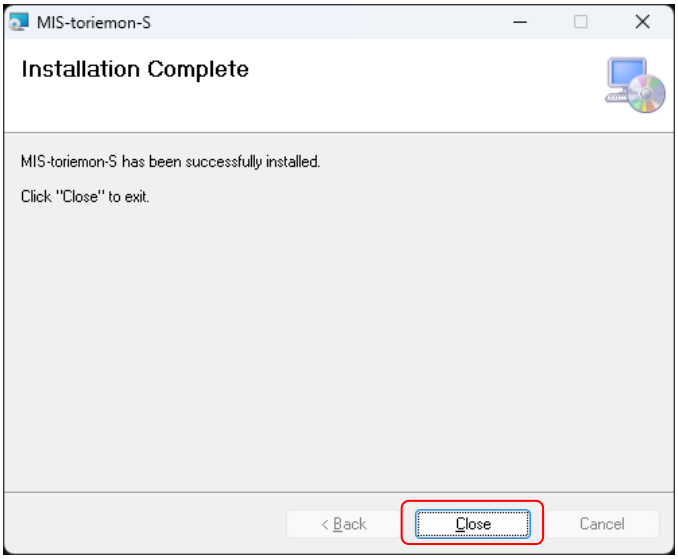
Select the destination folder for the installation. Click [Next] to continue to the next screen.

④



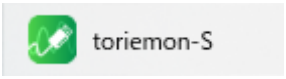
Click [Next] to begin the installation process.

⑤



Click [Close] to complete the installation.

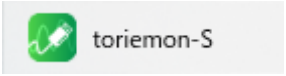
● After installation, the MIS-toriemon-S application will appear in the Windows Start menu.



4. TORIEMON-S Software Overview

4.1 Startup

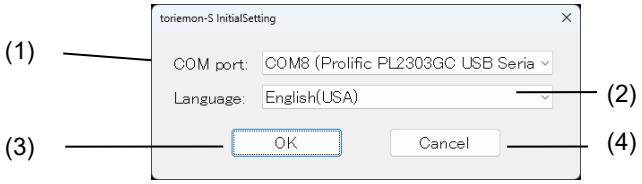
Launch TORIEMON-S by selecting it from the Start menu.



4.2. Interface and Functions

4.2.1. Initial Screen

When TORIEMON-S starts, the following screen will appear.



(1) Communication Port : Only COM numbers registered in the Device Manager can be displayed and selected.

(2) Language Selection : When the interface is displayed in English, the following language options are available: English, English (USA), or Japanese.

When the interface is displayed in Japanese, the following language options are available: 英語 (English), 英語(米) (English [USA]), or 日本語 (Japanese).

Switching the display language will update the main screen.

The software supports the following models for each language:

• English	FGPX, FGP series
• English (USA)	FGV-XY, FGV-HXY series
• Japanese	FGPX, FGP series

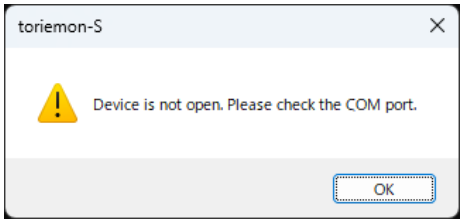
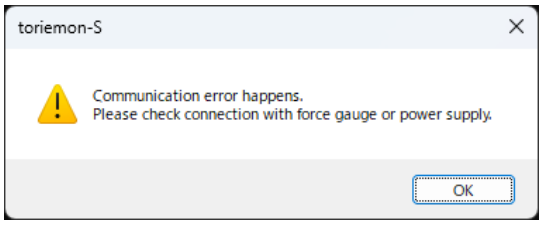
(3) OK : Clicking [OK] sends the settings to the Force Gauge and opens the main input screen.

(4) Cancel : Clicking [Cancel] closes the initial screen.

If a communication error occurs when the [OK] button is clicked, the following message will be displayed.

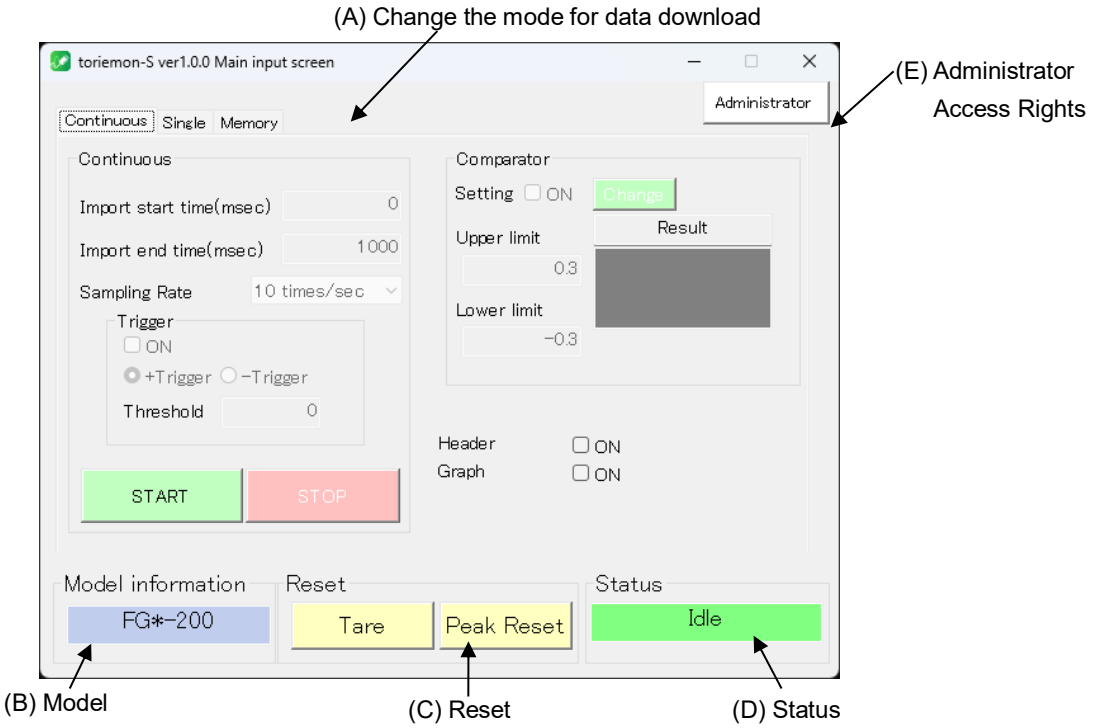
• A communication port different from the PC's configuration was selected in “Communication Port.”

• The PC and the Force Gauge are not properly connected.

<table>
<tr><td>Check the connection of the serial cable between the PC and the Force Gauge.
If there are no issues with the connection, verify the COM port settings on your PC.</td><td> 
</td></tr>
<tr><td colspan="2">• If the communication settings on the Force Gauge are invalid.</td></tr>
<tr><td>Ensure that the baud rate on the Force Gauge is set to 19200.
If the baud rate is incorrect, adjust it on the Force Gauge to 19200.</td><td> 
</td></tr>
</table>

4.2.2. Main Input Screen

When communication is functioning correctly, clicking the [OK] button on the initial screen will display the following screen.



(A) Change the mode for data download

Select the desired data download mode by choosing one of the three available tabs: “Continuous,” “Single,” or “Memory.”

The page corresponding to the selected data download mode will be displayed.

① Continuous Mode

This mode enables real-time downloading of continuous load data from the Force Gauge.

Features include comparator functionality and graph creation.

② Single Mode

This mode enables the download of a single measurement value or peak value. Comparator functionality is supported.

③ Memory Mode

This mode enables the downloading of memory contents from the Force Gauge and enables remote control of measurements in the Force Gauge's memory mode.

(B) Model information

Displays the model information of the connected Force Gauge.

(C) Reset

① Tare

Performs a tare reset on the Force Gauge.

② Peak Reset

Performs a peak reset on the Force Gauge.

(D) Status

The data download status is displayed as follows.

Display	Status Description
Idle	Data download is ready and available.
Importing	Continuous data is being actively downloaded.
Waiting for import	Awaiting the trigger to initiate continuous data download.
Measuring	Currently measuring in Memory Mode.
Communication error	The Force Gauge and PC are not properly connected.
Connection error	

(E) Administrator Access Rights

Displays the Administrator screen.

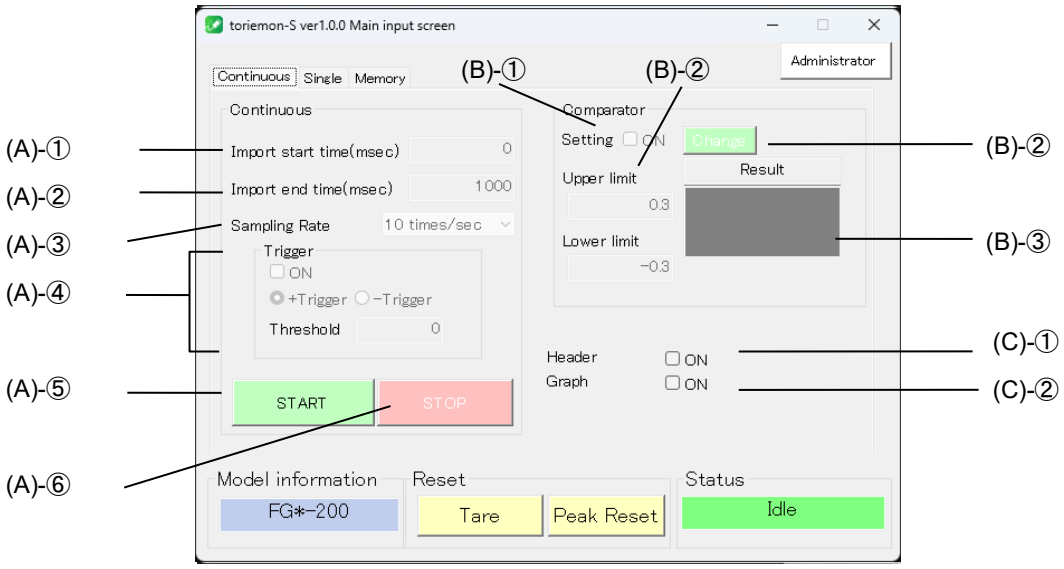
This screen provides options to lock or unlock settings and to change the password.

4.2.3. Continuous Data Download

Clicking the “Continuous” tab on the main screen opens the page shown below.

The “Continuous” function enables real-time downloading of continuous load data from the Force Gauge.

Features include comparator functionality and graph creation.



(A) Continuous Data Download

①Start Time for Download (0–99999)

Sets the delay interval before the download begins after the [START] button is pressed.

When the trigger is ON, the download starts after the specified interval has elapsed following trigger activation.

When the trigger is OFF, the download starts after the specified interval has elapsed following the pressing of the [START] button.

② End Time for Download (up to 65,000 data)

Sets the interval to end the download.

When the trigger is ON, the interval from trigger activation to the end of the download is set.

When the trigger is OFF, the interval between pressing the [START] button to the end of the download is set.

Regardless of the specified interval, the download will automatically stop once it reaches 65,000 data.

③ Download Interval

Select the interval from the dropdown menu: 10 times/sec, 20 times/sec, 50 times/sec, or 100 times/sec.

Example: Selecting 100 times/sec → approximately 100 data are downloaded per second.

> Caution
> • The “Download Interval” for continuous data download is an approximate value.
> In actual use, the number of data downloaded per second may exceed the value set in the “Download Interval” setting.

④ Trigger (-9999 to 9999)

• Trigger ON Checkbox

Clicking this checkbox toggles the trigger ON or OFF.

When selected, the trigger is enabled at the start of the download.

⑤ [START] Button

Initiates the continuous data download.

The data download will continue until the [STOP] button is pressed or the specified number of data is reached.

Once the [START] button is clicked, all other buttons except the [STOP] button will be disabled until the download is complete.

⑥ [STOP] Button

Stops the continuous data download.

(B) Comparator Functionality

① Comparator ON Checkbox

Clicking this checkbox toggles the comparator ON or OFF.

When set to OFF, the comparator functionality is disabled.

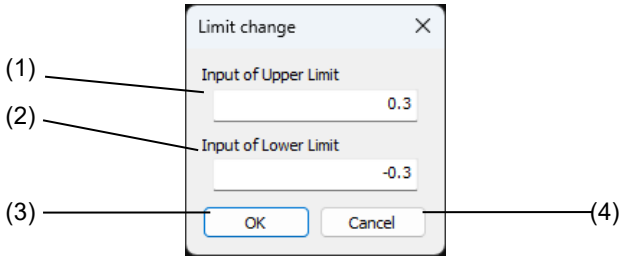
② Upper and Lower Limit Comparator Value Display

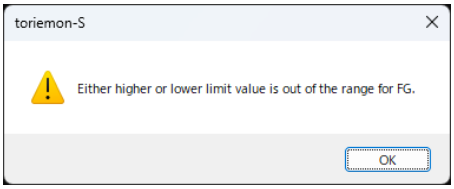
Displays the upper and lower limit comparator values for load assessment.

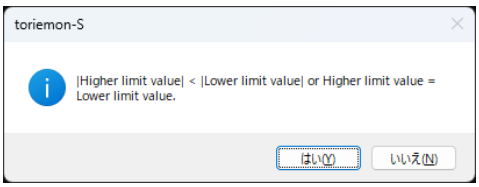
When TORIEMON-S starts, or the data download mode is changed, the comparator values set on the Force Gauge are retrieved and displayed.

③ [Change] Button

Clicking the [Change] button opens an input form, as shown below.



(1) Upper Limit Comparator Value Input (-9999 to 9999)	Enter the upper limit comparator value. If the value entered is within the acceptable input range but exceeds the displayable range of the connected Force Gauge, an error message (as shown below) will appear when the [OK] button is clicked, and the change will not be applied. 
(2) Lower Limit Comparator Value Input (-9999 to 9999)	Enter the lower limit comparator value. Similar to (1), if the value entered is within the acceptable input range but exceeds the displayable range of the connected Force Gauge, an error message will appear when the [OK] button is clicked, and the change will not be applied.
(3) [OK] Button	Clicking the [OK] button updates the upper and lower limit comparator values and applies the changes directly to the comparator settings on the Force Gauge. If the lower limit comparator value is greater than the upper limit comparator value, a warning message will appear (as shown below) when the [OK] button is clicked. Click [Yes] to proceed.

	
(4) [Cancel] Button	Clicking the [Cancel] button exits the input form without applying any changes to the upper and lower limit comparator values. In this case, the comparator settings on the Force Gauge remain unchanged. The upper and lower limit comparator values will retain their previous settings as they were before the [Change] button was clicked.

④ Result Window

When graph creation is not performed, the upper and lower limit comparator values are evaluated after the data download is completed. The results are displayed in the result window on the main input screen.

The result window shows the following outcomes.

- Continuous data load is within range : OK (background/font: Blue)
- Continuous data load is out of range : NG (background/font: Red)
- Upper limit < Lower limit : NG (background/font: Red)
- Comparator not performed : Greyed out

(C) Other

① Header Checkbox

Clicking this checkbox toggles the header output ON or OFF.

When selected, and data is downloaded, the downloaded data will include “Continuous Data” at the beginning.

The checkbox is automatically deselected after a single download session.

② Graph Checkbox

Clicking this checkbox toggles graph creation ON or OFF.

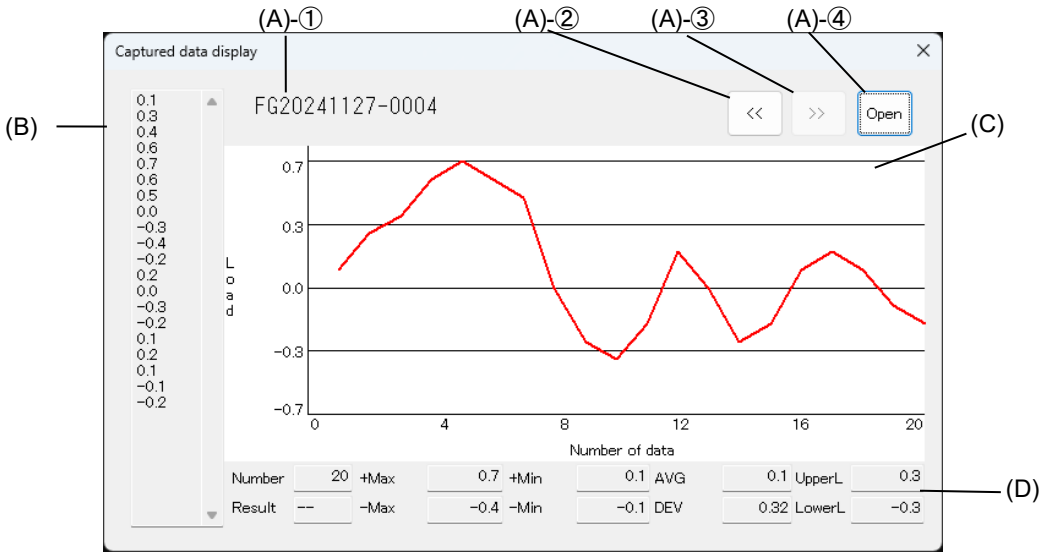
When enabled during continuous data download, a graph is displayed in the data display window.

4.2.4. Displaying Downloaded Data

When data is downloaded from the “Continuous” tab on the main screen, the downloaded data and graph are displayed.

The downloaded data is shown in real-time, while the graph and other related items are displayed after the download is complete.

Data obtained from the “Single” or “Memory” tabs are not displayed here.



(A) Loading CSV Files

① File Name

Displays the file name of the currently displayed downloaded data.

② <<

Opens the previous file (file name sequential number -1) for the currently displayed downloaded data and displays the data and graph.

③ >>

Opens the next file (file name sequential number +1) for the currently displayed downloaded data and displays the data and graph.

④ Open

Opens the file selection dialog.

Displays the downloaded data and the graph based on the selected CSV file.

Note that CSV files not created from the “Continuous” tab may not display properly.

(B) Downloaded Data

After clicking the [START] button on the “Continuous” tab of the main screen, the downloaded data is displayed in real-time.

The downloaded data is automatically saved as a CSV file.

File Name: FG {yyyymmdd}-0123.csv (0123 is a sequential number starting from 1)

Save Folder: %APPDATA%\NDTC\MIS-toriemon-S\DATA

When a CSV file is loaded, the saved data from the file is displayed.

(C) Graph

Displays a graph based on the downloaded data.

The graph is automatically saved as a bitmap file.

File Name: FG {yyyymmdd}-0123.bmp (0123 is a sequential number starting from 1)

Save Folder: %APPDATA%\NDTC\MIS-toriemon-S\DATA

(D) Report on Downloaded Data Report

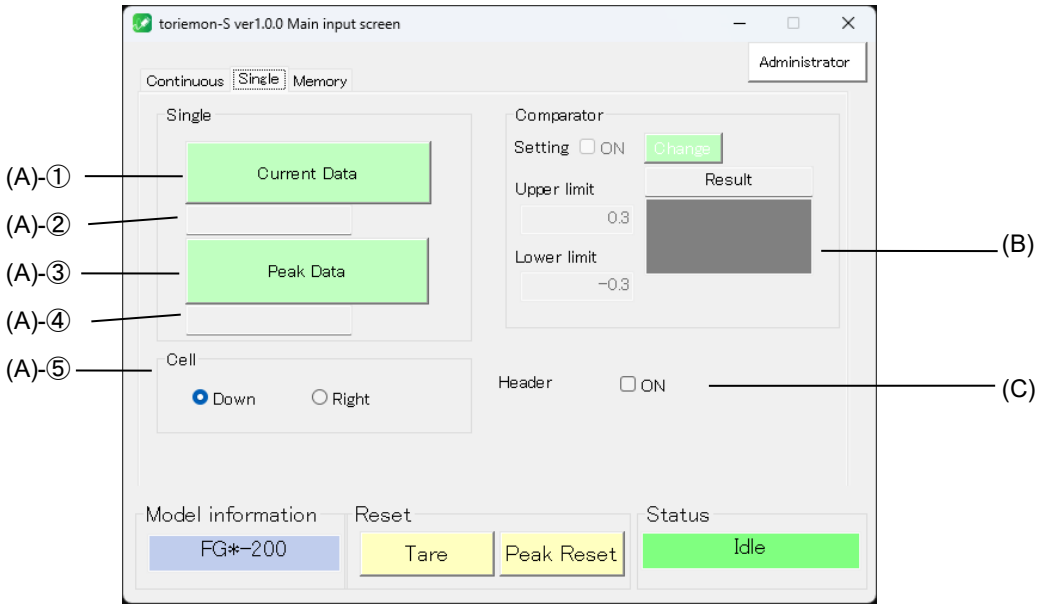
① Number of Data	:	The total number of data downloaded.
② Result	:	The upper and lower limit comparator result for the continuous data.
③ +Max	:	The maximum load value within the positive (+) range.
④ -Max	:	The maximum load value within the negative (-) range (determined by absolute value).
⑤ +Min	:	The minimum load value within the positive (+) range.
⑥ -Min	:	The minimum load value within the negative (-) range (determined by absolute value).
⑦ AVG	:	The average value of the continuous data.
⑧ DEV	:	The standard deviation of the continuous data.
⑨ Upper Limit	:	The upper limit comparator value set in the main input screen.
⑩ Lower Limit	:	The lower limit comparator value set in the main input screen.

4.2.5. Single Data Download

Clicking the “Single” tab on the main screen opens the page shown below.

This mode enables the download of a single measurement value or peak value.

Comparator functionality is supported.



(A) Single Data Download

① [Current Data] Button

Clicking the [Current Data] button displays a single measured data in (A)-②.

The downloaded data is automatically saved as a CSV file.

File Name: FG_SINGLE_DATA{yyyymmdd}-0123.csv (0123: sequential number starting from 1)

Save Folder: %APPDATA%\NDTC\MIS-toriemon-S\DATA\SingleData

③ [Peak Data] Button

Clicking the [Peak Data] button displays a single peak data (+Peak Data and -Peak Data) in (A)-④.

The downloaded data is automatically saved as a CSV file.

File Name: FG_SINGLE_DATA{yyyymmdd}-0123.csv (0123: sequential number starting from 1)

Save Folder: %APPDATA%\NDTC\MIS-toriemon-S\DATA\SingleData

When a single peak data is downloaded, the peak data on the Force Gauge is reset.

⑤ Cell

Specifies the direction in which data is inserted into cells during the download of current or peak data.

(B) Comparator Functionality

Result Window

During the download of current data, the upper and lower limit comparator values are evaluated, and the results are displayed in the result window.

The upper and lower limit comparator values are not evaluated for peak data. The result window shows the following outcomes.

• Load is within range.	:	OK (background/font: Blue)
• Load exceeds the upper limit	:	HIGH (background/font: Red)
• Load is below the lower limit.	:	LOW (background/font: Red)
• Upper limit < Lower limit and load is greater than or equal to the upper limit and less than or equal to the lower limit.	:	BOTH (background/font: Red)
• Comparator not performed	:	Greyed out

* All operations, except for the result window display, are identical to those in the “Continuous Data Download” mode (refer to P10).

(C) Other

Header Output Checkbox

Clicking this checkbox toggles the header output ON or OFF.

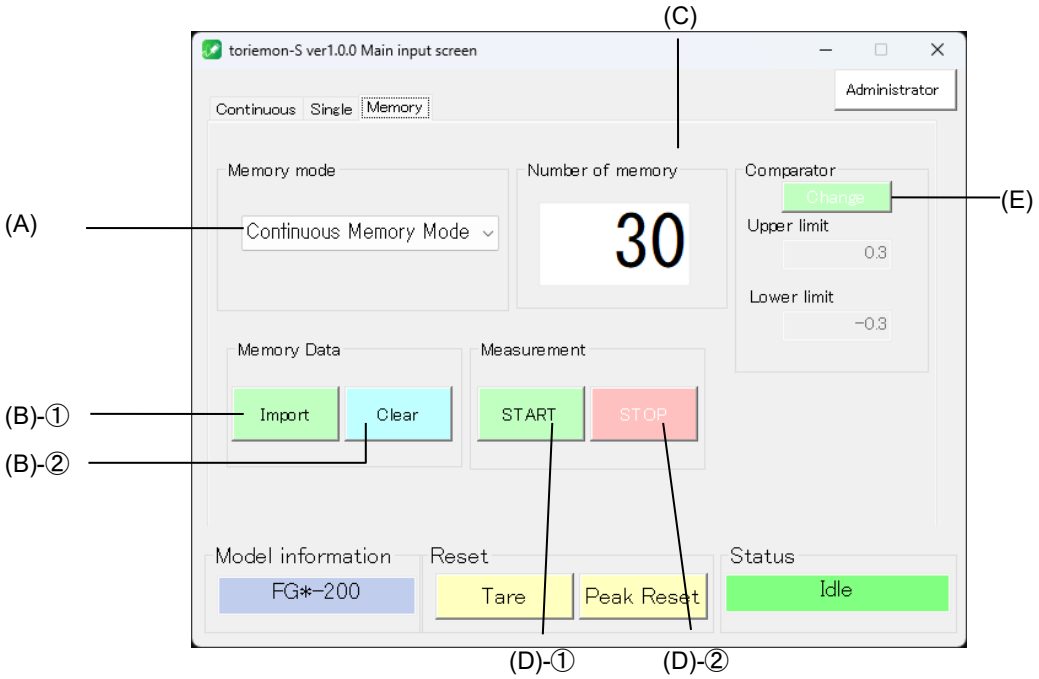
When selected, data downloaded to a CSV file will include “Current Data” at the beginning for current data downloads and “+Peak” and “-Peak” at the beginning for peak data downloads.

The checkbox is automatically deselected after a single download session.

4.2.6 Memory Mode

Clicking the “Memory” tab on the main screen opens the page shown below.

This mode enables the downloading of memory contents from the Force Gauge and enables remote control of memory mode measurements in the Force Gauge.



(A) Memory Mode

The memory mode of the Force Gauge can be changed by selecting Single Memory Mode, Continuous Memory Mode, or Standard Memory Mode from the dropdown menu.

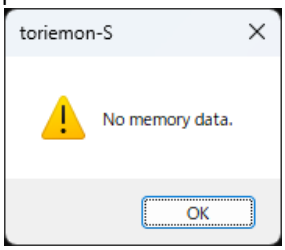
When TORIEMON-S starts or when the data download mode page is switched, the memory mode is automatically read from the Force Gauge and displayed.

(B) Memory Data

① [Import] Button

Clicking this button downloads the data from the memory mode currently selected on the Force Gauge.

If no memory data entries are available, a pop-up window will appear with the message “No memory data” (as shown below), and the download process will not proceed.



The downloaded data is automatically saved as a CSV file.

Single Memory Mode:

The file name is “FG_MEMORY_SINGLE{yyyymmdd}-0123.csv” (0123: sequential number starting from 1).

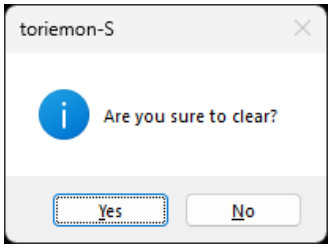
The save folder is “%APPDATA%\NDTC\MIS-toriemon-S\DATA\MemoryData\Single.”

Continuous Memory Mode:

The file name is “FG_MEMORY_CONTINUOUS{yyyymmdd}-0123.csv” (0123: sequential number starting from 1).
The save folder is “%APPDATA%\NDTC\MIS-toriemon-S\DATA\MemoryData\Continue.”
Standard Memory Mode:
The file name is “FG_MEMORY_STANDARD{yyyymmdd}-0123.csv” (0123: sequential number starting from 1).
The save folder is “%APPDATA%\NDTC\MIS-toriemon-S\DATA\MemoryData\Standard.”

② [Clear] Button

Clicking this button opens a pop-up window with the message: “Are you sure to clear?” Click [Yes], and all data in the currently selected memory mode on the Force Gauge will be deleted.



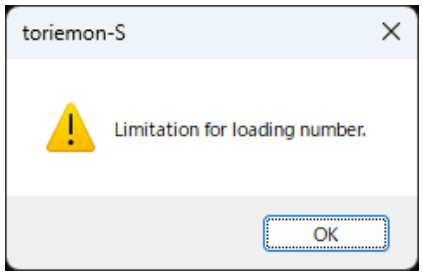
(C) Number of Memory Data

Displays the number of memory data entries in the currently selected memory mode.
When TORIEMON-S starts, the data download mode is changed, or a memory mode measurement is completed, the memory mode is read from the Force Gauge and displayed.

(D) Memory Mode Measurement

① [START] Button

Clicking this button begins the memory data download from the Force Gauge in the currently selected memory mode.
For Continuous or Standard Memory Mode, measurement can be stopped by clicking the [STOP] button.
If the Force Gauge’s memory is full, a pop-up window with a message (as shown below) will appear, and measurement will not commence.



② [STOP] Button

Clicking this button stops measurement during memory mode measurement. (Note: This button is disabled in Single Memory Mode.)

(E) Comparator Functionality

Sets and displays the upper and lower limit comparator values. The operation method is the same as in “Continuous Data Download” (B) Comparator Functionality (refer to P11).
However, in Memory Mode, the comparator ON/OFF toggle and the comparator window display are unavailable.

● Memory Data Contents

Memory data is retrieved as follows.

(1) Single Memory Data Display

	A	B	C
1	SingleMemory		
2	Unit	kg	
3	Number of data	100	
4	+Max	0	
5	-Max	0	
6	+Min	0	
7	-Min	0	
8	AVG	0	
9	DEV	0	
10	UpperLimit	99	
11	LowerLimit	-0.3	
12	No.	Result	Load
13	1	O	0
14	2	O	0
15	3	O	0
16	4	O	0
17	5	O	0

- Single Memory : Name of the memory mode.
- Unit : The selected unit.
- Number of data : The current number of recorded single memory data.
- +Max : The maximum load value within the positive (+) range.
- -Max : The maximum load value within the negative (-) range (determined by absolute value).
- +Min : The minimum load value within the positive (+) range.
- -Min : The minimum load value within the negative (-) range (determined by absolute value).
- AVG : The average value of the single memory data.
- DEV : The standard deviation of the single memory data.
- Upper Limit : The Force Gauge's upper comparator value.
- Lower Limit : The Force Gauge's lower comparator value.
- Data No. : The memory data number.
- Result : The upper and lower limit comparator result for the single memory data (refer to the next section).
- Load : The load value of the single memory data.

(2) Continuous Memory Data Display

	A	B	C
1	ContinuousMemory		
2	Unit	kg	
3	Number of data	30	
4	+Max	0	
5	-Max	0	
6	+Min	0	
7	-Min	0	
8	+Peak	0	
9	-Peak	0	
10	AVG	0	
11	DEV	0	
12	UpperLimit	99	
13	LowerLimit	-0.3	
14	No.	Result	Load
15	1	O	0
16	2	O	0
17	3	O	0
18	4	O	0
19	5	O	0
20	6	O	0
21	7	O	0

- Continuous Memory : Name of the memory mode.
- Unit : The selected unit.
- Number of data : The current number of recorded continuous memory data.
- +Max : The maximum load value within the positive (+) range.
- -Max : The maximum load value within the negative (-) range (determined by absolute value).
- +Min : The minimum load value within the positive (+) range.
- -Min : The minimum load value within the negative (-) range (determined by absolute value).
- +Peak : The +peak value of the continuous data.
- -Peak : The -peak value of the continuous data.
- AVG : The average value of the continuous memory data.
- DEV : The standard deviation of the continuous memory data.
- Upper Limit : The Force Gauge's upper comparator value.
- Lower Limit : The Force Gauge's lower comparator value.
- Data No. : The memory number of the continuous memory data.
- Result : The upper and lower limit comparator result for the continuous memory data (refer to the next section).
- Load : The load value of the continuous memory data.

(3) Standard Memory Data Display

	A	B	C	D	E	F	G	H
1	StandardMemory							
2	Unit	kg	UpperLim	99	LowerLim	-0.3		
3	No.	+Max	-Max	+Min	-Min	+Peak	-Peak	Last data
4	1	0.5	0	0.3	0	0.5	0	0.5
5	2	0.5	-0.2	0	0	0.5	-0.2	0.1
6	3	0.5	0	0.1	0	0.5	0	0.5
7	4	0.1	0	0	0	0.1	0	0.1
8	5	2.2	-1	0	0	2.2	-1.1	0.1
9	6	0.1	0	0.1	0	0.1	0	0.1
10	7	0.1	0	0.1	0	0.1	0	0.1
11	8	1	-0.5	0	0	1	-0.5	-0.3
12	9	1.3	-0.7	0	0	1.3	-0.7	1.3

- Standard Memory : Name of the memory mode.
- Unit : The selected unit.
- Upper Limit : The Force Gauge's upper comparator value.
- Lower Limit : The Force Gauge's lower comparator value.
- No. : The number of the standard memory data.
- +Max : The maximum load value within the positive (+) range.
- -Max : The maximum load value within the negative (-) range (determined by absolute value)
- +Min : The minimum load value within the positive (+) range.
- -Min : The minimum load value within the negative (-) range (determined by absolute value).
- +Peak : The +peak value of the standard memory data.
- -Peak : The -peak value of the standard memory data.
- Last data : The last data of the standard memory data.

● Display of Comparator Results For Memory Data Download

For both Single Memory Data Download and Continuous Memory Data Download, the comparator results are displayed as follows:

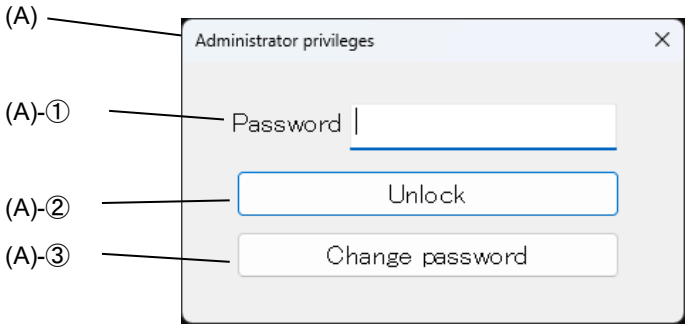
- Load is within range. : O
- Load exceeds the upper limit : H
- Load is below the lower limit. : L
- Upper limit < Lower limit and load is greater than or equal to the upper limit and less than or equal to the lower limit. : B
- Comparator not performed (*) : Blank

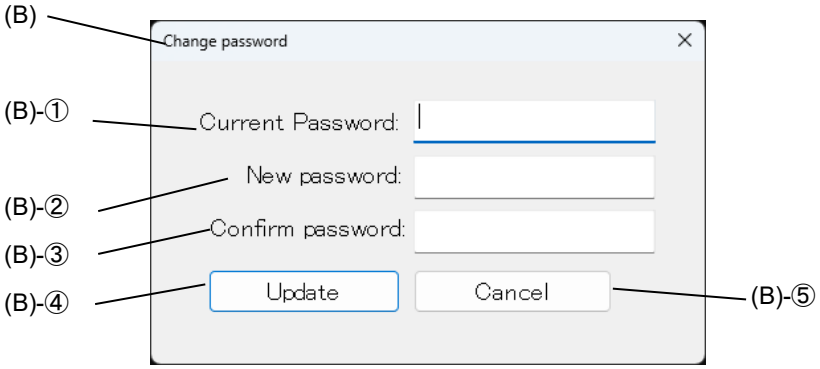
* The comparator ON/OFF setting is configured directly on the Force Gauge.

4.2.7 Administrator Access Rights

Clicking the [Administrator] button in any tab opens the window shown below.

Switching to Administrator enables configuration changes to take effect.





(A) Password Entry

① Password

Enter the admin password.

The default password after installation is “password.”

Please change it before using the system.

The password must consist of at least one alphanumeric character or symbol in single-byte format.

If the password is forgotten, reinstalling the software will reset it to the default password.

Reinstalling the software will reset all other configuration settings. Be sure to record the current settings before reinstalling and reconfigure them afterward.

②Unlock

If the entered password matches, the configuration settings in each tab can be modified.

③ Change Password

Navigate to the change password window.

(B) Change Password

① Current Password

Enter the currently set password.

② New Password

Enter the new password to be registered.

③ Confirm Password

Re-enter the new password. Ensure it matches the password entered in (B)-②.

④ Update Password

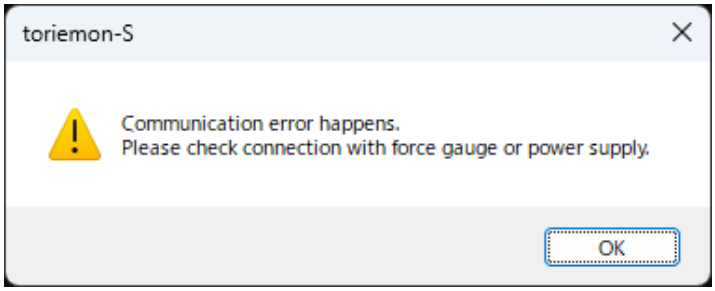
Updates the password. The password will be successfully updated if the new password and confirm password match.

⑤ Cancel

Close the window without changing the password.

4.3. In Case of Communication Errors

If the Force Gauge is powered OFF or disconnected from the computer while using TORIEMON-S, attempting any communication operation (such as clicking the [START] button) will display an error message, as shown below, accompanied by the status “Communication Error.”



To resolve this issue, ensure that the Force Gauge is securely connected and powered ON.

Once the connection is restored, retry the communication operation in TORIEMON-S to re-establish functionality.

If the problem persists, close TORIEMON-S, disconnect the serial cable from the computer, reconnect it securely, and restart TORIEMON-S.

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