

Multiple balance data collection software

# **Multi-Balance Collect**

## **Instruction Manual**

Shimadzu Corporation  
Balance Business Unit

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## 1. Introduction

**Make sure to read this instruction manual before using The Software.**

Thank you for downloading the "Multi-Balance Collect" multiple balance data collection software. This instruction manual explains the usage methods for the software and other information. Please carefully read this instruction manual, and use the software according to the explanations provided herein.

### **What you can do when you use the Multi-Balance Collect**

[Applicable Models]

The following balances and dedicated cable set sold by Shimadzu Corporation are required.

Model	Description (P/N)
AP, AT-R Series, MOC63u	USB Cable (S321-71730-41)
AT, BL, ELB Series	USB–serial adaptor (S321-62520) I/O–RS conversion cable (S321-71260-01)
TW/TX/TXB Series	USB-Serial Replacement Kit (S321-62520-45)
AU, UW/UX/UP, BW-K/BX-K Series	USB-Serial Replacement Kit (S321-62520-01)

Here's what you can do with Multi-Balance Collect.



- **Up to four balances can be connected to one PC, and the data of each balance can be identified and recorded in Excel.**  
→Refer to "1.6.Multi-Balance Collect overview" and "1.7.Multi-Balance Collect features"
- **Data can be recorded in Excel by both data acquisition request from PC and key operation of balance.**  
→Refer to "4.1.One time data collection" and "4.3.Data collection via balance operation"
- **Balance data can be collected continuously at regular intervals.**  
→Refer to "4.2.Continuous data collection"
- **You can check whether the balance data is received correctly and whether multiple balances are accidentally connected in a staggered manner.**  
→Refer to "3.2.Communication test function"
- **Sensitivity calibration record can be recorded separately from the weight value. (Excluding BL, ELB series, MOC63u)**  
→Refer to "4.4.Automatic collection of calibration results"
- **The date and time of the PC and the date and time of the balance can be synchronized. (Excluding AT/AT-R, TW/TX/TXB, BL, ELB series)**  
→Refer to "3.1.8.PC data and time synchronization function"
- **It is possible to prevent erroneous operations such as unintentional change of balance settings. (AP series only)**  
→Refer to "3.1.9.Balance menu lock function"
- **The collected data can be graphed.**  
→Refer to "9.1.I want to convert collected data into graphs"

## 1.1. Disclaimers

- The contents of this instruction manual may be changed to make improvements at any time without prior notice.
- All efforts are made to ensure the contents of this instruction manual are as accurate and thorough as possible at the time of creation, however please note that even in the event any errors or oversights are discovered, they may not be able to be corrected or revised immediately.
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- Excel and Windows are registered trademarks of U.S. Microsoft Corporation within the United States and in other territories. All other company and product names noted in this instruction manual are the trademarks or registered trademarks of their respective companies. Please note that the "TM" and "®" symbols are not used in the text of this instruction manual.
- The Company offers no guarantee that the serial communications functions will operate without issue on all PCs. The Company accepts no responsibility nor liability for any problems that may occur as the result of these functions. It is recommended that you always create backups of any important data, programs, or other items before use.

## 1.2. Instruction manual notation

This instruction manual uses the following notation for precautions based on the degree of risk and damages of the concerned event.

Notation	Meaning
 Caution	Used in cases where if the event is not avoided it could potentially result in minor to moderate injuries or physical damages.
 Note	Indicates information provided in order to ensure the correct use of the software.

## 1.3. Precautions

This section lists precautions for use of Multi-Balance Collect (Hereinafter referred to as "MBC").

### 1.3.1. Multi-Balance Collect usage precautions

Pay attention to the following points when using MBC.

- Run a communication test before collecting data using MBC.  
Refer to "3.2.Communication test function" for more details on communication tests.
- When collecting data using MBC, set the connected balance to general measurement mode (general measurement mode which does not use specific gravity measurement or other application functions). Also be sure not to use any auto print functions or interval timer functions which automatically output data from the balance.
- Do not edit Excel files (including Excel files in which MBC is opened) while collecting data with MBC.  
MBC cannot be used to collect data while an Excel file is being edited (Excel enters editing mode when a cell is double clicked). If Excel files are opened for reference only without being

edited, then they can be open while collecting data using MBC (both the data file with MBC open and other Excel files). In addition, applications other than Excel (notepad, Word, etc.) can be used to carry out editing on non-Excel files during data collection.

- D) Once the data collected by MBC reaches 100,000 rows, please switch to a new file. In addition, if carrying out data collection across multiple consecutive days, switch to a new file for each day.

As the amount of data increases, Excel's processing speed may decrease, so once the collected data reaches 100,000 rows, please switch to a new file. If data is collected once every 1 second, then this would equal 86,400 data per day, so also switch to a new file each day.

### **1.3.2. Precautions when using type approval model balances**

Pay attention to the following points when collecting data with MBC using type approval model balances.

- A) The data collected using MBC cannot be used as measurement data for transactions or proof/certification.
- B) Set the MBC stability information settings to OFF for use because stability information may not be output in the type approval model.  
Refer to "3.1.6.Stability information settings" for stability information configuration methods.
- C) To collect data into Excel without the [ ] brackets which are applied to the measurement data, set the MBC trimming setting to ON.  
Refer to "3.1.7.Trimming function" for trimming configuration methods.

### **1.3.3. Precautions regarding using Multi-Balance Collect and Balance Keys together**

Please take note of the following precautions when using Balance Keys balance data collection software and Multi-Balance Collect together.

- A) Data cannot be collected from the same balance using both Balance Keys and Multi-Balance Collect at the same time. The COM port can only be used by one of the programs at a time.
- B) The Balance Keys software operates in the background, so COM ports may be used by Balance Keys when not intended. If Balance Keys is connected to a balance with only one available COM port, the COM port will not be displayed and cannot be connected to even if attempting to set that COM port in Multi-Balance Collect. When using Multi-Balance Collect, close the program according to the Balance Keys instruction manual.

## **1.4. Software license agreement**

This software license agreement (Hereinafter referred to as "This Agreement") is concluded between the customer and Shimadzu Corporation (Hereinafter referred to as "The Company"). Please thoroughly read the clauses of This Agreement before using The Company's software (Hereinafter referred to as "The Software"), included manuals, or other related document and electronic documents (Hereinafter collectively referred to as "The Software Products"). Customers agree to be bound by the clauses of This Agreement upon any download, duplication, or use of The Software. The Company does not grant any authorization for use of The Software Products to any customers who refuse to be bound by the clauses of This Agreement.

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- No user support is provided for The Software Products.
- Customers download and install The Software at their own risk.
- The Software is subject to being improved or changed at any time without prior notice.
  - The Company may change This Agreement at its discretion if the changes to This Agreement are reasonable in light of the necessity of the change, the appropriateness of the changed content and other circumstances related to the change. When making such changes, the intent to change This Agreement and the details of the changed Agreement and its date of enforcement shall be posted on The Company website (URL : [https://www.shimadzu.com/products/balances/balances-software/mbc/mbc\\_dl.html](https://www.shimadzu.com/products/balances/balances-software/mbc/mbc_dl.html)) by no later than 1 month before the date of enforcement of the changed Agreement.

## 1.5. Operating environment

The software will operate in the following environments.

- Microsoft Excel 2016 or later
- Windows10 (64 bit)

## 1.6. Multi-Balance Collect overview

Using the Multi-Balance Collect Multiple balance data collection software allows for up to four balances to be connected to a single PC to collect data for each balance individually. For example, when carrying out inspection work using different balances installed on multiple production lines, the data from multiple balances can be centrally managed from a single PC. Since the balance data can be collected by operating the balance keys or the PC mouse, it is convenient when the PC and the balance are installed in separate locations or when the measurement values of multiple balances are managed only by operating the PC. In addition, the software can also continuously collect balance data at regular intervals, which also makes it convenient for use when recording changes over time from multiple balances such as when measuring changes in weight resulting from water evaporation.

The differences between Multi-Balance Collect and the Balance Keys balance data collection software are explained in the table below. Refer to "1.3.3. Precautions regarding using Multi-Balance Collect and Balance Keys together".

	Multi-Balance Collect	Balance Keys
Summary	Allows for the identification and collection of data from multiple balances into Excel. Is also capable of continuous data collection and carrying out data collection operations from a PC. Useful for cases where you want to continually collect and centrally manage data from multiple balances on a single PC and in cases where you want to be able to operate data collection through both balance operation and PC operation.	Balance data is directly collected in Excel or another Windows application using an interface which is similar to keyboard input. Useful for cases where you want to directly collect data into an application such as Excel or other applications (notepad, etc.).
Data collection request from PC	Yes	No
Continuous data collection	Yes	No (Depends on the features of the connected balance)
Identification and collection of data from multiple balances	Yes	No
Collection of data in preferred applications	No (Excel only)	Yes



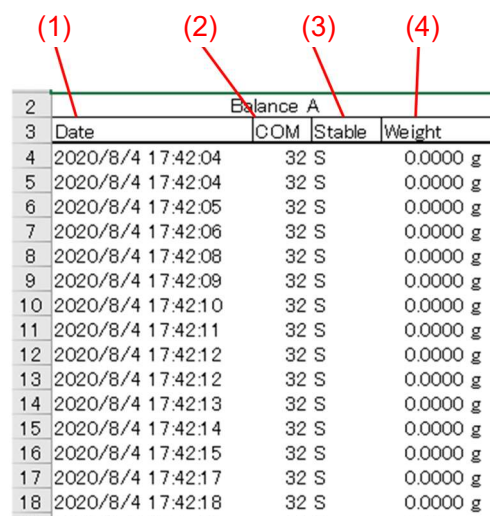
Using other applications during measurement value recording	Yes	No
Synchronize the date and time of the balance with the PC	Yes (Except AT/AT-R, TW/TX/TXB, BL, ELB series)	No
Prevent changes to the balance menu settings	Yes (AP series only)	No

### 1.7. Multi-Balance Collect features

Multi-Balance Collect can be used to identify and collect measurement value data from up to a maximum of 4 balances in Excel using a single PC. Items (1) through (4) below are record for each connected balance. Data (1) through (4) can be recorded for a maximum of up to 4 balances' worth of data on a single Excel sheet.

Refer to the collected data example (close-up) and collected data example (whole) below.

- (1) Date and time information  
Records the date and time set on the PC when the measurement data is collected.
- (2) Number of the COM port to which the balance is connected.
- (3) Stability of the balance measurement value.  
Displays "S" when the balance measurement value is stable, and "U" when the value is unstable.
- (4) Measurement value data  
Records the measurement value displayed on the balance.



	Balance A			
	Date	COM	Stable	Weight
4	2020/8/4 17:42:04	32	S	0.0000 g
5	2020/8/4 17:42:04	32	S	0.0000 g
6	2020/8/4 17:42:05	32	S	0.0000 g
7	2020/8/4 17:42:06	32	S	0.0000 g
8	2020/8/4 17:42:08	32	S	0.0000 g
9	2020/8/4 17:42:09	32	S	0.0000 g
10	2020/8/4 17:42:10	32	S	0.0000 g
11	2020/8/4 17:42:11	32	S	0.0000 g
12	2020/8/4 17:42:12	32	S	0.0000 g
13	2020/8/4 17:42:12	32	S	0.0000 g
14	2020/8/4 17:42:13	32	S	0.0000 g
15	2020/8/4 17:42:14	32	S	0.0000 g
16	2020/8/4 17:42:15	32	S	0.0000 g
17	2020/8/4 17:42:17	32	S	0.0000 g
18	2020/8/4 17:42:18	32	S	0.0000 g

**Data for 1<sup>st</sup> balance**  
Collected data (close-up)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Precautions • Carry out a communication test to make sure that the connection to the balance is correct before collecting data. • Do not edit Excel files during data collection • Once the data collected reaches 100,000 rows, please switch to a new file. In addition, if carrying out data collection across multiple consecutive days, switch to a new file for each day. • Shimadzu Corporation accepts no responsibility nor liability for any problems which may occur related to the use of The Software. It is recommended that you always create backups of any important data, programs, or other items before use. Refer to "1.1.Disclaimers", "1.3.Precautions", "1.4.Software license agreement" in the instruction manual for more details.															
2	Balance A				Balance B				Balance C				Balance D			
3	Date	COM	Stable	Weight	Date	COM	Stable	Weight	Date	COM	Stable	Weight	Date	COM	Stable	Weight
4	2020/8/4 17:42:04	32 S		0.0000 g	2020/8/4 17:42:04	21 S		0.00000g	2020/8/4 17:42:04	20 S		0.0000g	2020/8/4 17:42:04	29 S		0.003g
5	2020/8/4 17:42:04	32 S		0.0000 g	2020/8/4 17:42:05	21 S		0.00000g	2020/8/4 17:42:05	20 S		0.0000g	2020/8/4 17:42:05	29 S		0.003g
6	2020/8/4 17:42:05	32 S		0.0000 g	2020/8/4 17:42:06	21 S		0.00000g	2020/8/4 17:42:06	20 S		0.0000g	2020/8/4 17:42:06	29 S		0.003g
7	2020/8/4 17:42:06	32 S		0.0000 g	2020/8/4 17:42:07	21 S		0.00000g	2020/8/4 17:42:07	20 S		0.0000g	2020/8/4 17:42:07	29 S		0.003g
8	2020/8/4 17:42:08	32 S		0.0000 g	2020/8/4 17:42:08	21 S		0.00000g	2020/8/4 17:42:08	20 S		0.0000g	2020/8/4 17:42:08	29 S		0.003g
9	2020/8/4 17:42:09	32 S		0.0000 g	2020/8/4 17:42:09	21 S		0.00000g	2020/8/4 17:42:09	20 S		0.0000g	2020/8/4 17:42:09	29 S		0.003g
10	2020/8/4 17:42:10	32 S		0.0000 g	2020/8/4 17:42:10	21 S		0.00000g	2020/8/4 17:42:10	20 S		0.0000g	2020/8/4 17:42:10	29 S		0.003g
11	2020/8/4 17:42:11	32 S		0.0000 g	2020/8/4 17:42:11	21 S		0.00000g	2020/8/4 17:42:11	20 S		0.0000g	2020/8/4 17:42:11	29 S		0.003g
12	2020/8/4 17:42:12	32 S		0.0000 g	2020/8/4 17:42:12	21 S		0.00000g	2020/8/4 17:42:12	20 S		0.0000g	2020/8/4 17:42:12	29 S		0.003g
13	2020/8/4 17:42:12	32 S		0.0000 g	2020/8/4 17:42:13	21 S		0.00000g	2020/8/4 17:42:13	20 S		0.0000g	2020/8/4 17:42:13	29 S		0.003g
14	2020/8/4 17:42:13	32 S		0.0000 g	2020/8/4 17:42:14	21 S		0.00000g	2020/8/4 17:42:14	20 S		0.0000g	2020/8/4 17:42:14	29 S		0.003g
15	2020/8/4 17:42:14	32 S		0.0000 g	2020/8/4 17:42:14	21 S		0.00000g	2020/8/4 17:42:15	20 S		0.0000g	2020/8/4 17:42:15	29 S		0.003g
16	2020/8/4 17:42:15	32 S		0.0000 g	2020/8/4 17:42:16	21 S		0.00000g	2020/8/4 17:42:16	20 S		0.0000g	2020/8/4 17:42:16	29 S		0.003g
17	2020/8/4 17:42:17	32 S		0.0000 g	2020/8/4 17:42:17	21 S		0.00000g	2020/8/4 17:42:17	20 S		0.0000g	2020/8/4 17:42:17	29 S		0.003g
18	2020/8/4 17:42:18	32 S		0.0000 g	2020/8/4 17:42:18	21 S		0.00000g	2020/8/4 17:42:18	20 S		0.0000g	2020/8/4 17:42:18	29 S		0.003g

Data for 1<sup>st</sup> balance

Data for 2<sup>nd</sup> balance

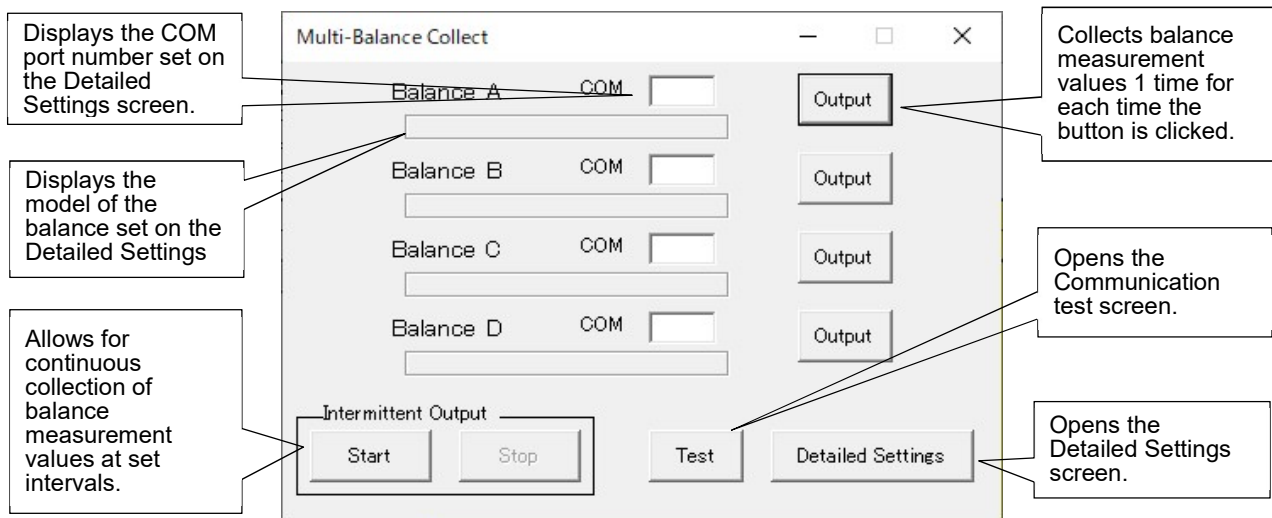
Data for 3<sup>rd</sup> balance

Data for 4<sup>th</sup> balance

Collected data (whole)

The screen details are as shown below.

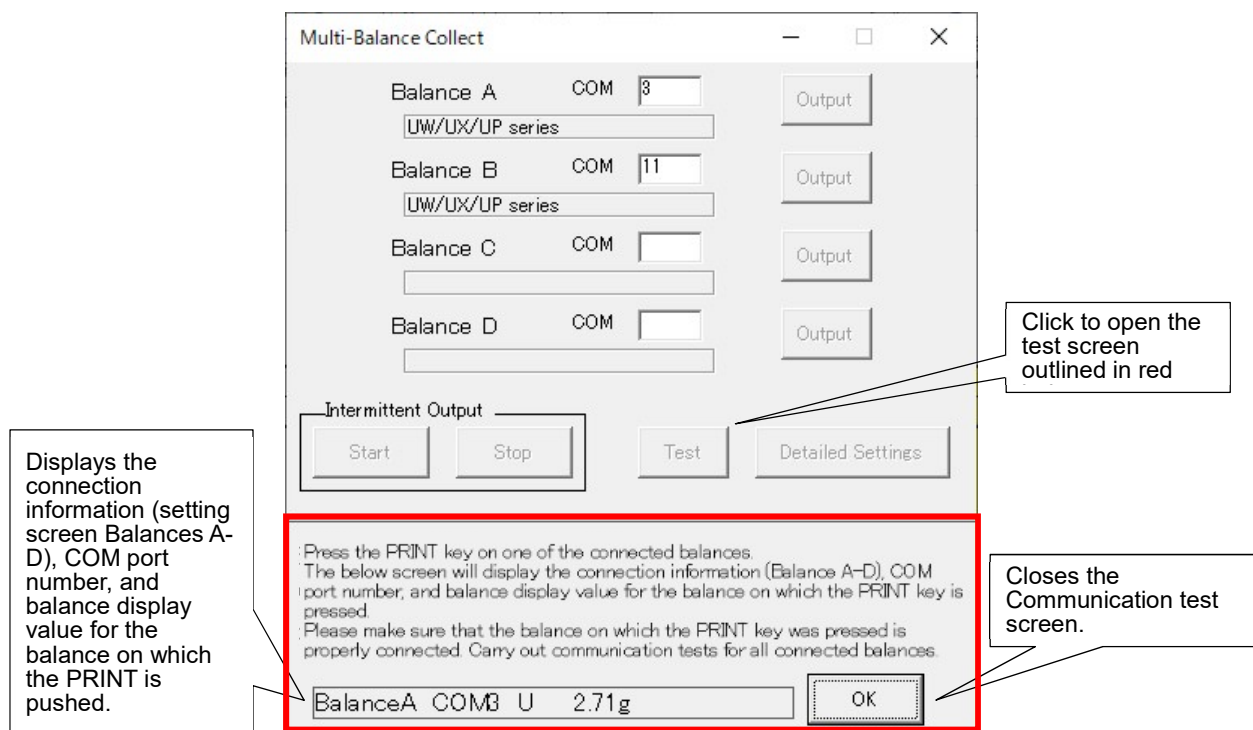
<Measurement screen>



Continuous data collection ("Intermittent Output" in the above figure) and one time data collection ("Output" in the above figure) can be used together. One time data collection is also available during continuous data collection. Refer to "2. Setup" and "4. Data collection in Multi-Balance Collect" for more details.

### <Communication test screen>

The portion of the below figure outlined in red is the Communication test screen. The Communication test screen can be used to verify that the balances are connected correctly. Refer to "3.2 Communication test function" for more details.



### <Detailed Settings screen>

The settings in the red frame are for each balance. The settings in the blue frame are common to all connected balances. Refer to "3. Multi-Balance Collect settings" for more details.

The screenshot shows the 'Detailed Settings' dialog box with the following callouts:

- Amount of connecting balance:** Sets the number of balances to be connected.
- Model of balance:** The settings for each balance are on separate tabs (Balances A-D).
- COM:** Sets the model and COM port of the balance to be connected.
- Specification of communication:** Used to configure the detailed communication settings.
- Stability Information:** Sets whether balance measurement value stability information is on or off.
- Trimming:** Sets whether to trim (exclude) the units from the collected measurement values.
- Time Synchronization:** Used to synchronize PC and balance times.
- Menu Lock (AP series only):** Used to prevent unintentional balance setting changes.
- Output Interval:** Sets the interval when collecting measurement values at regular intervals.

Click "OK" to save the settings, or click "Cancel" to exit without saving.

## 2. Setup

Carry out setup according to the procedures below.

### 2.1. Advance preparation

#### 2.1.1. Prepare connection cables

The connection cables will differ depending on the balance model. Prepare cables according to the table below.


Balance model	Items to be prepared
AP, AT-R Series, MOC63u	USB cable set (P/N: S321-71730-41)
AT, BL, and ELB Series	USB-serial adapter (P/N: S321-62520) I/O-RS converter cable (P/N: S321-71260-01)
TW/TX/TXB Series	USB-Serial conversion kit (P/N: S321-62520-45)
AU, UW/UX/UP, BW-K/BX-K Series	USB-Serial conversion kit (P/N: S321-62520-01)

#### 2.1.2. Prepare enough PC USB ports for the number of balances to be connected

If there are not enough USB ports available on the PC for the number of balances to be connected, then prepare a separate USB hub.

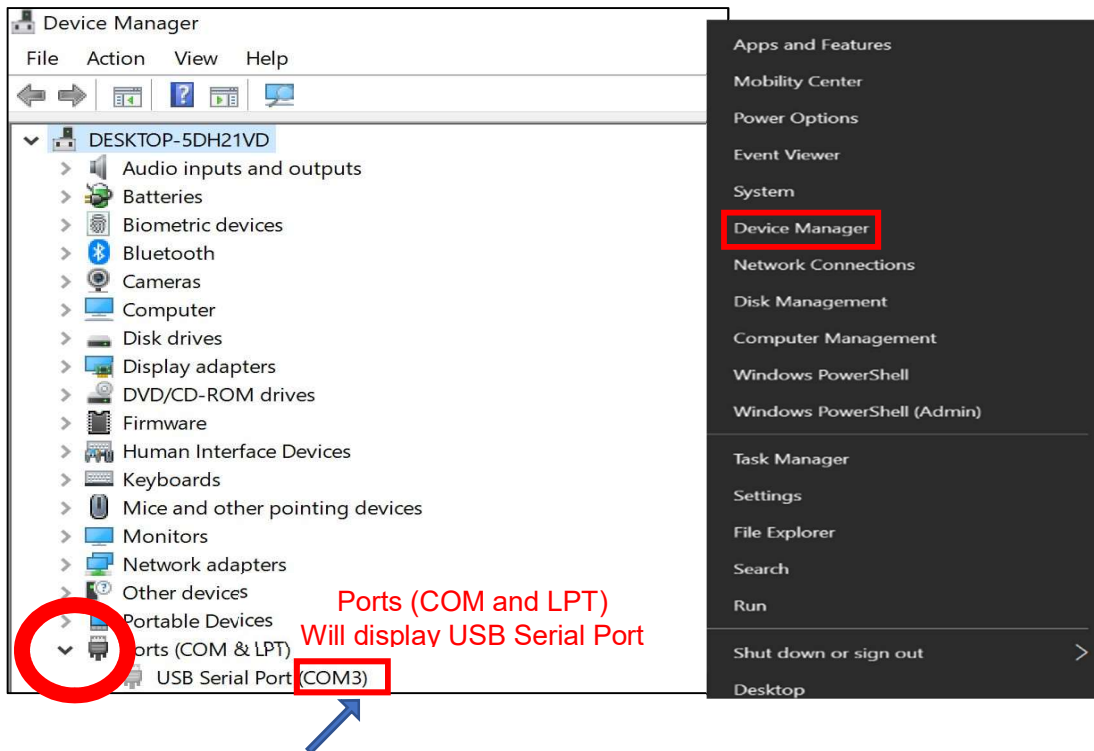
#### 2.1.3. Install the USB driver

The USB driver will be automatically installed on the PC if both the balances and PC are connected to the Internet. Verify if the driver is installed correctly using the methods explained in "2.1.3.1. USB driver installation and COM port number verification methods".

 **Note** The USB driver will not be automatically installed on the PC if the balances and PC cannot be connected to the Internet. Manually install the USB driver according to the procedures explained in "2.1.3.2. What to do if the USB driver cannot be installed normally" and the following sections.

##### 2.1.3.1. USB driver installation and COM port number verification methods

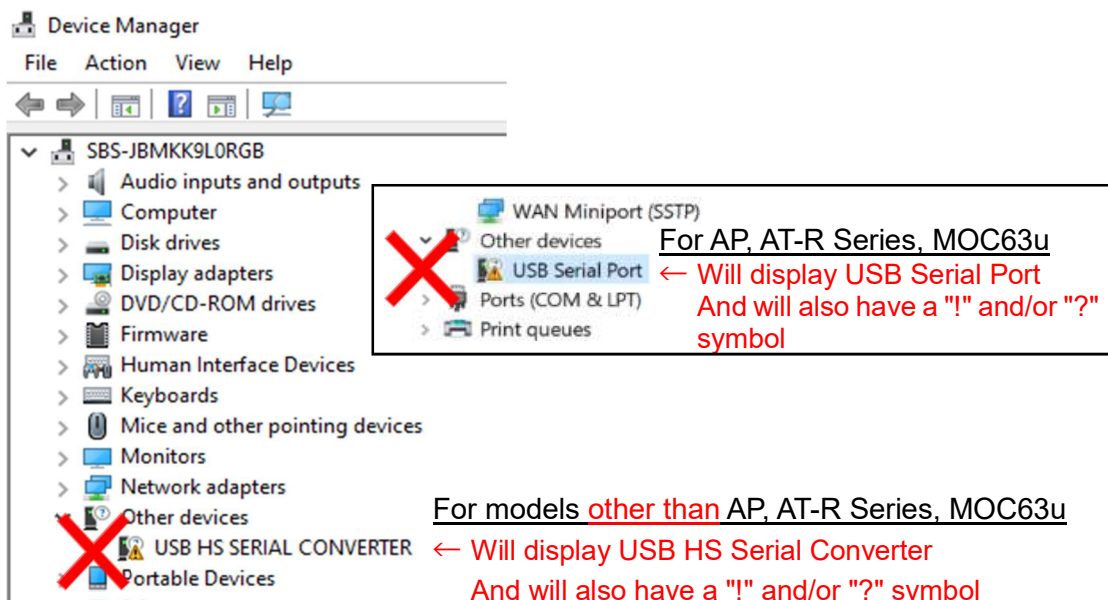
- (1) Connect the balances and PC.
- (2) Right click on the "Start Button" on the bottom left of the PC screen.
- (3) Open the "Device Manager".  
The menu shown in the figure on the bottom right will open, so left click on "Device Manager (M)".
- (4) Verify the "Ports (COM and LTP)".  
Verify the "Ports (COM and LTP)" in the "Device Manager". If the USB Serial Port (COMX) is as shown in the figure on the bottom left, the USB driver has been correctly installed. The "X" in the displayed "COMX" will be the COM port number (COM3 in the example in the below figure).



- Note • The COM port number is required for the Multi-Balance Collect communication settings.
- If the COM port number is not displayed as shown in the figure above, the USB driver has not been installed correctly. Reinstall the driver according to the procedures explained in "2.1.3.2. What to do if the USB driver cannot be installed normally" and the following sections.

### 2.1.3.2. What to do if the USB driver cannot be installed normally

If an error like that shown in the figure below is displayed, the USB driver has not been installed correctly. Reinstall the driver according to the following procedure.



### 2.1.3.3. Manual USB driver installation method

It will be necessary to install the USB driver manually if the balances and PC cannot be connected to the Internet or if the USB driver automatic installation fails.

(1) Download the USB driver.

The USB driver to be installed will differ depending on the balance model. Select the applicable USB driver from the following 2 types and download the appropriate driver.

· For AP, AT-R Series, MOC63u

<https://www.an.shimadzu.co.jp/balance/products/driver.htm>

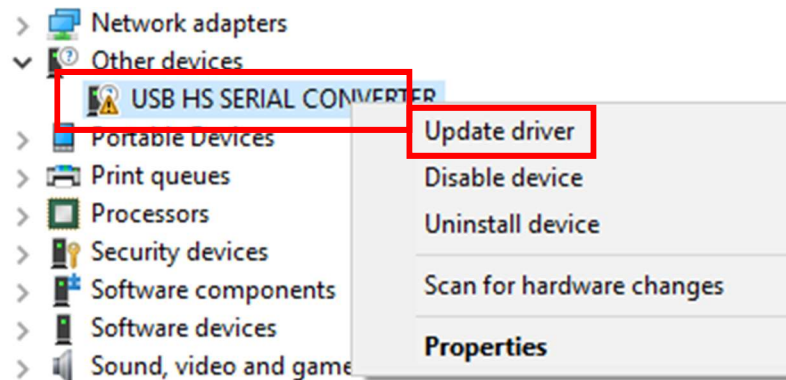
· AU, AT, UW/UX/UP, TW/TX/TXB, BL, ELB, BW-K/BX-K Series

[https://www.buffalo.jp/support/download/detail/?dl\\_contents\\_id=62142](https://www.buffalo.jp/support/download/detail/?dl_contents_id=62142)



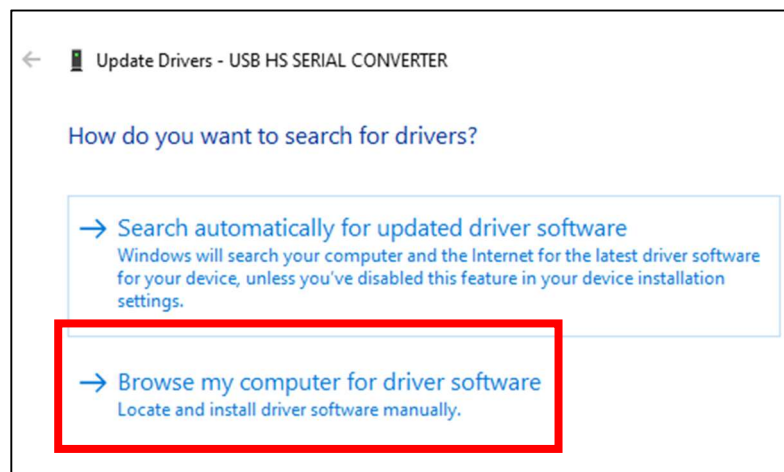
(2) Update the driver

Right click on "USB Serial Port (with a ! and/or ? symbol)" and then left click on "Update driver".



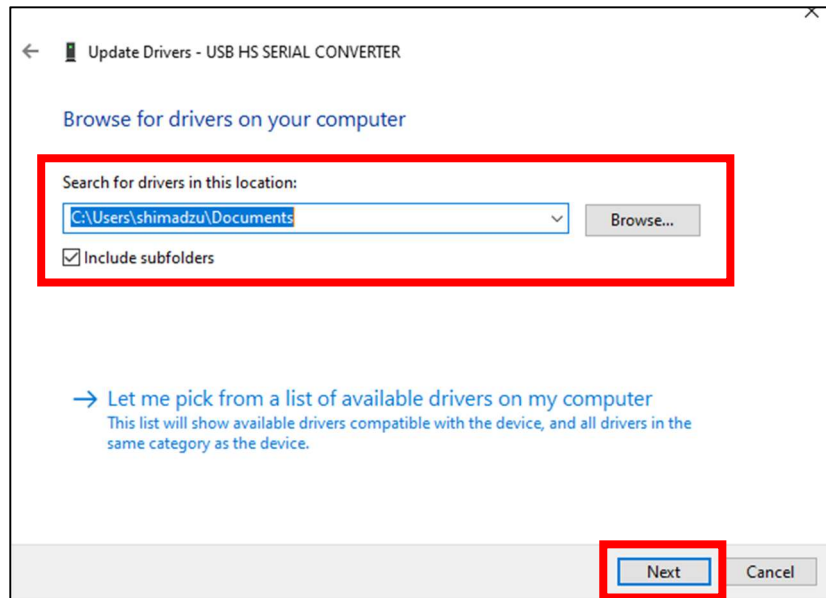
(3) Select "Browse my computer for driver software (R)".

The below driver search dialog will be displayed, so select "Browse my computer for driver software (R)".

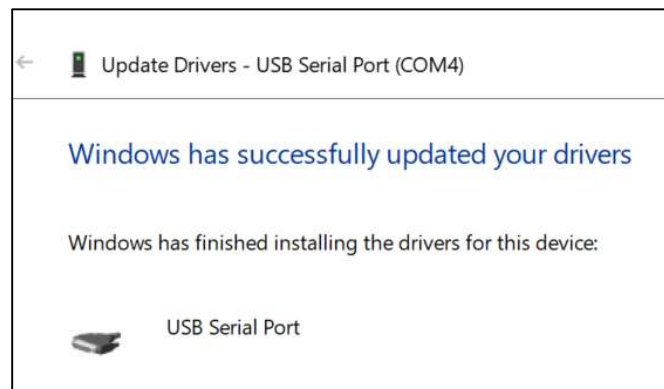




- (4) Browse for the downloaded USB driver and specify for the folder where you saved it.  
Left click on "Browse" on the dialog shown in the figure below and browse for the USB driver you downloaded from the Internet in step (1) and select the folder where you saved it. The name of the folder where the file was saved in step (1) will be as follows.
- For AP, AT-R, and MOC63u Series → "cdm21228"
  - For other than the above → "XP32bit\_2000"

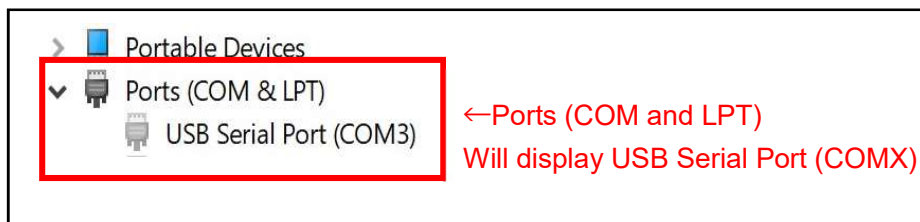



- (5) Left click on "Next" on the dialog shown in the above figure.
- (6) The message "Windows has successfully updated your driver software" will be displayed.  
The message "Windows has successfully updated your driver software" will be displayed as shown in the figure below.

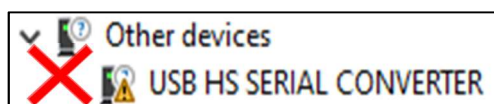


(7) Verify the "Device Manager".

Verify the "Device Manager" again. If the everything is as shown in the figure below, the installation is complete.



 **Note** If "USB Serial Port (with a ! and/or ? symbol)" is displayed as shown in the figure below, return to step (2) and try to update the driver again.



#### 2.1.4. Downloading Multi-Balance Collect

- (1) Login to a PC which can connect to the Internet using administrator privileges.
- (2) Start a browser and access the following website.  
<https://www.shimadzu.com/an/products/balances/balances-software/mbc/index.html>
- (3) On the "Multi-Balance Collect - Multiple balance data collection software" page, click "Download" and download the "Multi-Balance\_Collect.zip" file.

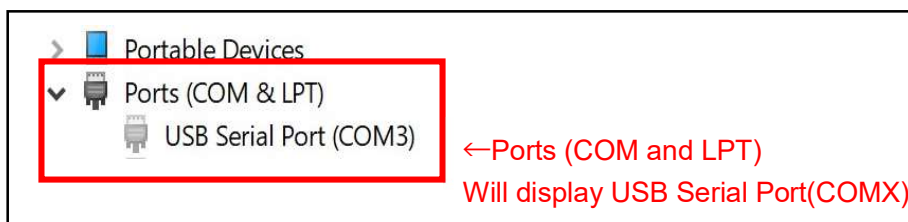
## 2.2. Balance and PC connection

Connect the PC to each of the balances according to the following procedure.

- (1) Open the "Device Manager" on the PC.
- (2) Turn the balance power supply on.
- (3) Connect the connection cable to the balance unit.
- (4) Connect a USB hub to the USB port of the PC.  
If the PC has as many USB ports as there are balances to connect, you do not need to connect a USB hub. Please connect directly to the PC and the balance.
- (5) Connect the USB connector (A-Type) to a USB port on the PC.  
If you have not connected a USB hub, connect it directly to the USB port on the PC.



- (6) Verify the COM port number added in the Device Manager and make a note of the connected balance to which the COM port is assigned.  
You will need to know which balance is connected to which number COM port on the PC for the configuration of settings in "3. Multi-Balance Collect settings". Refer to "2.1.3.1. USB driver installation and COM port number verification methods" for information on COM port number verification methods.



Make a note of the balance connected to the USB hub (or directly connected to the PC) and the COM port number added to the device manager.

- (7) Repeat steps (3) through (6) for each of the balances to be connected.

## 2.3. Starting Multi-Balance Collect

- (1) Decompress the downloaded "Multi-Balance\_Collect.zip".  
Right click on the "Multi-Balance\_Collect.zip" which you downloaded in "2.1.4. Downloading Multi-Balance Collect" and click on "Extract all" or "Decompress".

The contents of the unzipped folder are as follows.

- "Multi-Balance\_Collect.xltn"

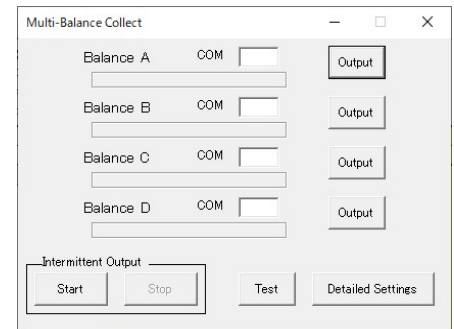
This software (Multi Balance Collect).

- "Multi-Balance\_Collect\_Graph.xltn"

This is a file in which a sheet for graphs is added to Multi Balance Collect. You can automatically create a graph when you collect the data. For the method of graphing, refer to "Use the Graph conversion example Excel file" in "9.1.1 want to convert collected data into graphs".


- "Instruction manual"

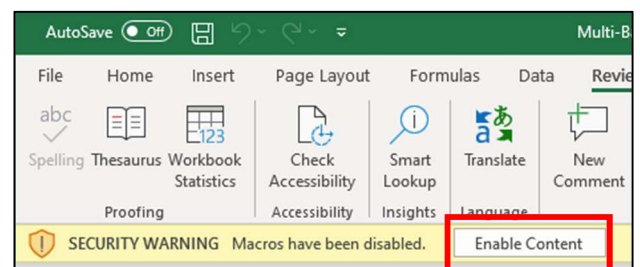
This is the instruction manual for Multi Balance Collect. Please read the instruction manual carefully and use it correctly according to the contents.



- (2) Start Multi-Balance Collect.

Right click on the "Multi-Balance\_Collect.xltn" located inside the decompressed folder from step (1) and click "Open". The Excel file will open and the screen shown to the right (Measurement screen) will be displayed.

 **Note** When Multi-Balance Collect is started, the Measurement screen may not appear and the message shown in the figure to the right may be displayed. If this occurs, left click on the "Enable contents" button outlined in red in the figure to the right to close the message and display the Measurement screen.

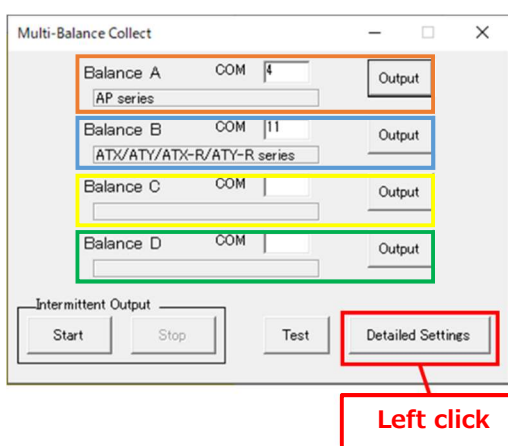


### 3. Multi-Balance Collect settings

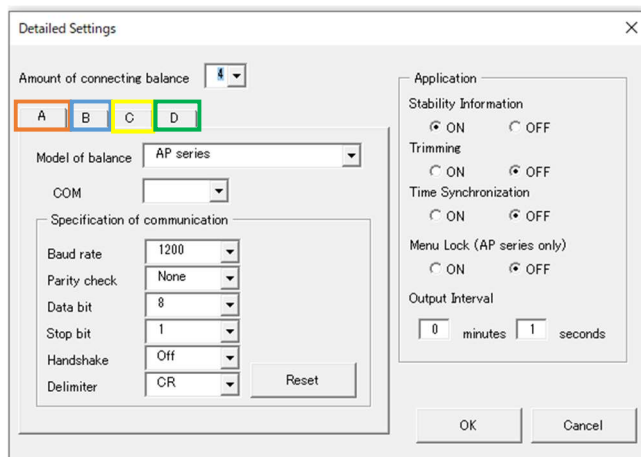
The configuration procedures for the Multi-Balance Collect Excel macro (Hereinafter referred to as "MBC") are as shown below.

- (1) Display the Detailed Settings screen.

Click on "Detailed Settings" on the measurement screen to display the Detailed Settings screen.



Measurement screen



Detailed Settings screen

The "A, B, C, and D" tabs on the Detailed Settings screen correspond to "Balance A" to "Balance D" on the Measurement screen and the Excel sheet.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Precautions • Carry out a communication test to make sure that the connection to the balance is correct before collecting data. • Do not edit Excel files during data collection • Once the data collected reaches 100,000 rows, please switch to a new file. In addition, if carrying out data collection across multiple consecutive days, switch to a new file for each day. • Shimadzu Corporation accepts no responsibility nor liability for any problems which may occur related to the use of The Software. It is recommended that you always create backups of any important data, programs, or other items before use. Refer to "1.1.Disclaimers", "1.3.Precautions", "1.4.Software license agreement" in the instruction manual for more details.															
2	Balance A				Balance B				Balance C				Balance D			
3	Date	COM	Stable	Weight	Date	COM	Stable	Weight	Date	COM	Stable	Weight	Date	COM	Stable	Weight
4	2020/8/4 17:42:04	32	S	0.0000 g	2020/8/4 17:42:04	21	S	0.00000g	2020/8/4 17:42:04	20	S	0.0000g	2020/8/4 17:42:04	29	S	0.003g
5	2020/8/4 17:42:04	32	S	0.0000 g	2020/8/4 17:42:05	21	S	0.00000g	2020/8/4 17:42:05	20	S	0.0000g	2020/8/4 17:42:05	29	S	0.003g
6	2020/8/4 17:42:05	32	S	0.0000 g	2020/8/4 17:42:06	21	S	0.00000g	2020/8/4 17:42:06	20	S	0.0000g	2020/8/4 17:42:06	29	S	0.003g
7	2020/8/4 17:42:06	32	S	0.0000 g	2020/8/4 17:42:07	21	S	0.00000g	2020/8/4 17:42:07	20	S	0.0000g	2020/8/4 17:42:07	29	S	0.003g

Data for 1<sup>st</sup> balance

Data for 2<sup>nd</sup> balance

Data for 3<sup>rd</sup> balance

Data for 4<sup>th</sup> balance

- (2) Configure the settings for each function

Refer to "3.1.1. Number of connected balance settings" to "3.1.10. Data collection interval settings" on the next and subsequent pages for information on the configuration of settings for each function. Click "OK" after configuring the settings to save the current setting changes. Click the "Cancel" button on the Detailed Settings screen to discard the current setting changes.



Note

**It is necessary to set the balance model name and COM port number for each balance connected.**

**Configure the model names and COM port numbers for each of the connected balances which you wish to record data for on the A through D tabs on the Detailed Settings screen.**

(3) Save the Excel file

After starting Multi-Balance\_Collect.xlsm, when the first time setting changes are complete (after clicking the "OK" button on the Detailed Settings screen) a "Save as" dialog box will be displayed. Enter your desired file name and save the file. After the file is named and saved (saved as) it will be able to be overwritten and saved normally (save).

(4) Carry out a communication test

After changing settings, check if the balance is connected correctly, and if there are no problems, close the Communication test screen. If there are any problems, change the communications settings and verify the problems are resolved before closing the Communication test screen. Refer to "3.2 Communication test function" for more details on communication tests.

(5) Keep an Excel file with various settings completed

Before starting data collection, copy and save the Excel file that was confirmed to have no connection problem in the test (4) above. If you keep the file before starting data collection, you do not need to make detailed settings when retrieving data from the beginning in the same connection environment.

For details, refer to <Save the settings and close the Detailed Settings screen> in "3.1.11.Close the Detailed Settings screen".

(6) Start collecting data

Refer to "4. Data collection in Multi-Balance Collect" and subsequent sections for more details on data collection.

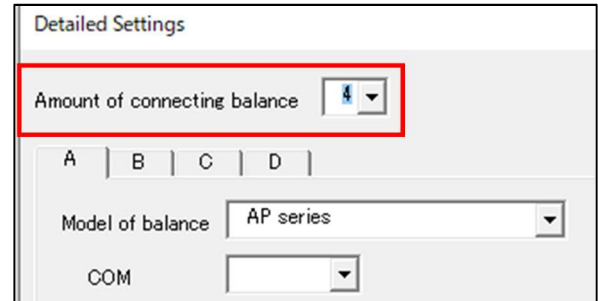
### 3.1. Multi-Balance Collect detailed settings

#### 3.1.1. Number of connected balance settings

Up to a maximum of 4 balances can be connected at the same time by changing the "Amount of connecting balance" setting on the Detailed Settings screen.

- (1) Set the number of balances connected.

Select the number of balances connected from the "Amount of connecting balance" pulldown menu. The number of balances set here will be the balances available for connections starting from "Balance A". For example, if you set the "Amount of connecting balance" to "3", "Balance A" to "Balance C" will be able to be connected, while "Balance D" will not be able to be connected.

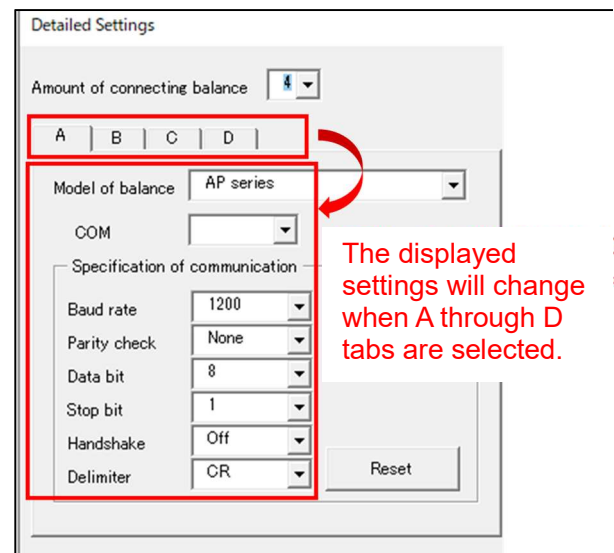


#### 3.1.2. Specifying the balance for which to configure communication settings

Select which balance to configure communication settings for using tabs A through D. The "A, B, C, and D" tabs correspond to "Balance A" to "Balance D" on the Measurement screen and the Excel sheet. For example, measurement value data for the balance configured on tab A will be recorded in the "Balance A" column of the Excel sheet. Switch between tabs A through D to configure the communication settings for each balance. Configure the communication settings for all of the connected balances.

- (1) Click tabs A through D to select which balance to configure communications settings for.

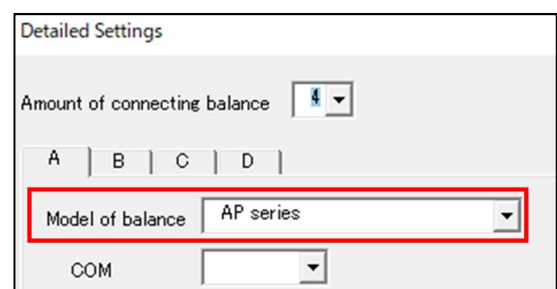
Tab A is selected by default.



#### 3.1.3. Balance model settings

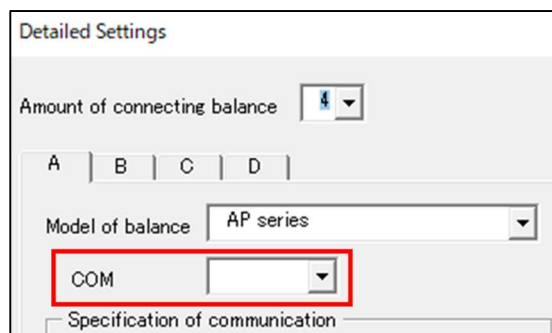
Sets the model of the connected balance.

- (1) Set the model of balance to be connected in the "Model of balance" field pulldown menu. The default settings are "AP series". There is no need to change the setting if the balance to be connected is an AP Series balance.



### 3.1.4. Setting the COM port number

Select the COM port number for the balance to be connected in the "COM" field pulldown menu on the Detailed Settings screen. Select the COM port number which you noted down as corresponding to the connected balance in "2.2. Balance and PC connection". For example, if editing the tab A, select the COM port number for the balance which you want to be recorded in the "Balance A" column of the Excel sheet. Only connectable COM port numbers will be displayed in the pulldown menus.

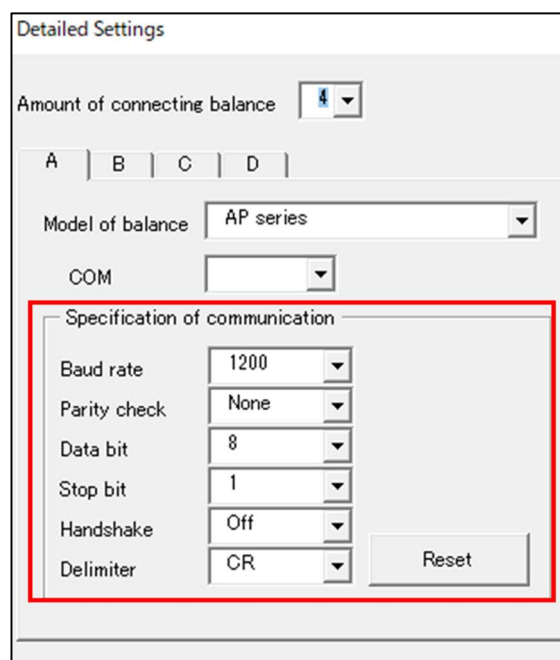


### 3.1.5. Multi-Balance Collect and balance communication settings

Verify that the Multi-Balance Collect "Specification of Communication" field settings are as shown outlined in red in the figure to the right (default values) and that these are the same as the communication settings on the corresponding balance. Clicking "Reset" will reset all of the setting values to the default values.

The default values of each communication specifications ("Specification of communication") setting value are as follows.

Baud rate (communication speed)	1200
Parity check	None
Data bit	8
Stop bit	1
Handshake	OFF
Delimiter	CR



- Note
- Refer to the instruction manuals for each balance model being used for balance configuration methods.
  - For some balance models where the parity check is something other than "None", the data bit will be automatically set to 7.
  - If changing the balance or Multi-Balance Collect communication settings, make absolutely sure that the communication settings are the same on both.



When changing from the above communication specifications (default values) and collecting data, set each item according to the following description.

**<Specification of communication (Communication specifications)>**

- **Baud rate**  
Selects the speed of communication with the balance.  
Select the same setting as the setting on the balance from the pulldown menu.  
[List]  
"300", "600", "1200", "2400", "4800", "9600", "19200"
- **Parity check**  
Selects the parity check bit used for verifying if there are any errors in transmitted data.  
Select the same setting as the setting on the balance from the pulldown menu.  
[List]  
"None", "Odd", "Even"
- **Data bit**  
Selects the bit length of each individual piece of data used for communication with the balance.  
Select the same setting as the setting on the balance from the pulldown menu.  
[List]  
"7", "8"
- **Stop bit**  
Selects the stop bit length of each individual piece of data used for communication with the balance.  
Select the same setting as the setting on the balance from the pulldown menu.  
[List]  
"1", "1.5", "2"
- **Handshake**  
Selects the handshake method (flow control) used for communication with the balance.  
Select the same setting as the setting on the balance from the pulldown menu.  
[List]  
"Off", "Software", "Hardware"
- **Delimiter**  
Selects the delimiter code (terminator) string used for communication with the balance.  
Select the same setting as the setting on the balance from the pulldown menu.  
[List]  
"CR", "LF", "CR+LF", "Comma"
- **Reset**  
Resets changed settings to default values.

### 3.1.6. Stability information settings

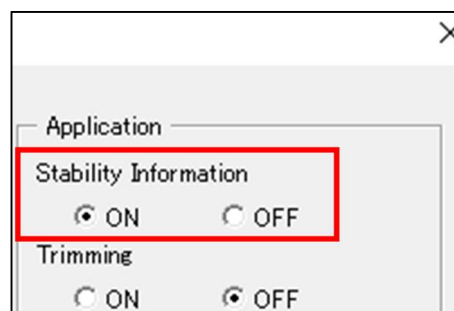
This function can be used to record the balance stability conditions along with measurement value changes over time at the time of the data collection in "4.1 One time data collection" and "4.2 Continuous data collection". "S" is recorded together with the measurement value data when the balance measurement value is stable during data collection, and "U" is recorded with the measurement value data when the value is unstable. This makes it possible to check past measurement value stability conditions after measurement is complete.



Note Turn this function OFF when using type approval model balances.

Refer to "1.3.2. Precautions when using type approval model balances" for details.

- (1) Opens the Detailed Settings screen.  
Click the "Detailed Settings" button on the Measurement screen to open the Detailed Settings screen.
- (2) Configure the Stability Information ON/OFF setting.  
Stability information will be recorded in the "Stable" column shown in the figure below when "Stability Information" is ON. The field will be blank when Stability Information is OFF.



- (3) Save the settings.  
Once you are finished configuring this function and any other settings, click the "OK" button on the Detailed Settings screen to save the settings.

Stability information is displayed in the "Stable" column.

Balance A				Balance B				Balance C				Balance D			
Date	COM	Stable	Weight	Date	COM	Stable	Weight	Date	COM	Stable	Weight	Date	COM	Stable	Weight
2020/8/4 17:42:04	32	S	0.0000 g	2020/8/4 17:42:04	21	S	0.0000g	2020/8/4 17:42:04	20	S	0.0000g	2020/8/4 17:42:04	29	S	0.003g
2020/8/4 17:42:04	32	S	0.0000 g	2020/8/4 17:42:05	21	S	0.0000g	2020/8/4 17:42:05	20	S	0.0000g	2020/8/4 17:42:05	29	S	0.003g
2020/8/4 17:42:05	32	S	0.0000 g	2020/8/4 17:42:06	21	S	0.0000g	2020/8/4 17:42:06	20	S	0.0000g	2020/8/4 17:42:06	29	S	0.003g
2020/8/4 17:42:06	32	S	0.0000 g	2020/8/4 17:42:07	21	S	0.0000g	2020/8/4 17:42:07	20	S	0.0000g	2020/8/4 17:42:07	29	S	0.003g
2020/8/4 17:42:08	32	S	0.0000 g	2020/8/4 17:42:08	21	S	0.0000g	2020/8/4 17:42:08	20	S	0.0000g	2020/8/4 17:42:08	29	S	0.003g
2020/8/4 17:42:09	32	S	0.0000 g	2020/8/4 17:42:09	21	S	0.0000g	2020/8/4 17:42:09	20	S	0.0000g	2020/8/4 17:42:09	29	S	0.003g
2020/8/4 17:42:10	32	S	0.0000 g	2020/8/4 17:42:10	21	S	0.0000g	2020/8/4 17:42:10	20	S	0.0000g	2020/8/4 17:42:10	29	S	0.003g
2020/8/4 17:42:11	32	S	0.0000 g	2020/8/4 17:42:11	21	S	0.0000g	2020/8/4 17:42:11	20	S	0.0000g	2020/8/4 17:42:11	29	S	0.003g
2020/8/4 17:42:12	32	S	0.0000 g	2020/8/4 17:42:12	21	S	0.0000g	2020/8/4 17:42:12	20	S	0.0000g	2020/8/4 17:42:12	29	S	0.003g
2020/8/4 17:42:12	32	S	0.0000 g	2020/8/4 17:42:13	21	S	0.0000g	2020/8/4 17:42:13	20	S	0.0000g	2020/8/4 17:42:13	29	S	0.003g

Data for 1<sup>st</sup> balance

Data for 2<sup>nd</sup> balance

Data for 3<sup>rd</sup> balance

Data for 4<sup>th</sup> balance

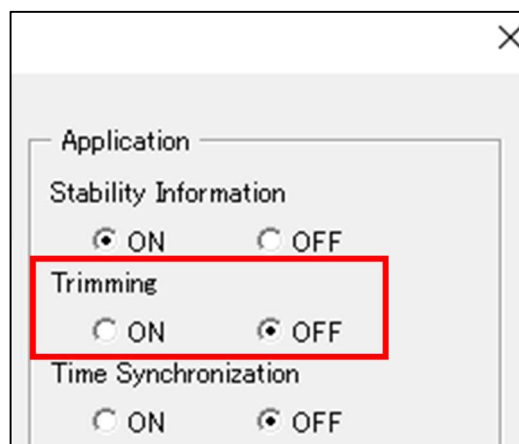
### 3.1.7. Trimming function

This function can be used to record values without the units and "[ ]" brackets added by type approval model balances when collecting data from balances. If trimming is set to ON, units and "[ ]" brackets will be trimmed (excluded) from the collected balance data, making it easier to use the collected data to make graphs, or to calculate totals, averages, etc. Trimming is set to OFF by default.




Note The data collected using MBC cannot be used as measurement data for transactions or proof/certification.

- (1) Opens the Detailed Settings screen.  
Click the "Detailed Settings" button on the Measurement screen to open the Detailed Settings screen.
- (2) Set trimming ON or OFF.
- (3) Save the settings.  
Once you are finished configuring this function and any other settings, click the "OK" button on the Detailed Settings screen to save the settings.

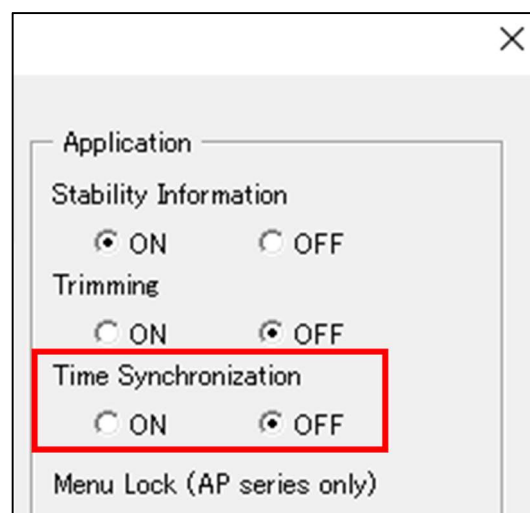


### 3.1.8. PC data and time synchronization function

This function can be used to synchronize PC and balance dates and times. If "Time Synchronization" is set to ON, the PC date and time settings will be applied to the balance. If "Time Synchronization" is set to "OFF", the PC date and time will not be set to the balances even if the "OK" button is clicked. This allows for the date and time settings of multiple balances to be synchronized with the PC date and time settings, which prevents any differences in the dates and time of each balance and makes it possible to record accurate dates and times of measurement results.


-  **Note**
- Only the "date", "hour", and "minute" can be synchronized for the UW/UX/UP, BW-K/BX-K Series, and MOC63u.
  - This function cannot be used on the AT/AT-R, TW/TX/TXB, BL, and ELB Series.

- (1) Opens the Detailed Settings screen.  
Click the "Detailed Settings" button on the Measurement screen to open the Detailed Settings screen.
- (2) Set if the PC date and time synchronization function will be "ON" or "OFF".  
Set whether the PC date and time synchronization will be "ON" or "OFF" under "Time Synchronization" on the Detailed Settings screen.
- (3) Save the settings.  
Once you are finished configuring this function and any other settings, click the "OK" button on the Detailed Settings screen to save the settings.



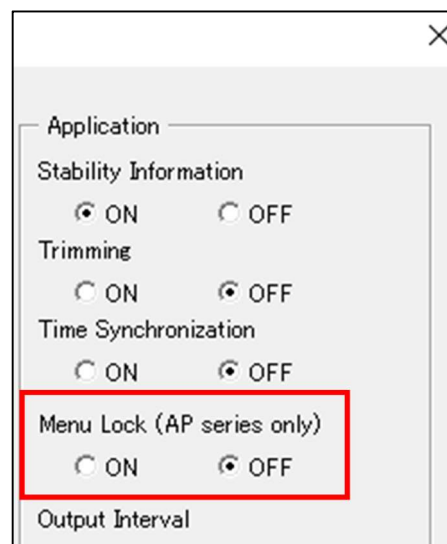
### 3.1.9. Balance menu lock function (AP Series only)


This function allows for some of the balance operation functions to be locked. When locked, only the balance [O/T], [PRINT], [ION], [←], [→], and [↑] keys will be enabled, making it possible to prevent mistakes such as unintentional setting changes. In addition, when locked, the balance will be set to general measurement mode (normal measurement mode which does not use specific gravity measurement or other application functions). This allows for the administrator to lock the settings of all balances from a single PC when multiple balances are operated by multiple users. This makes it possible to prevent incorrect operation or erroneous setting changes on the balances by balance users.

 **Note** This function can only be used on the AP Series. It is not available on any series other than the AP Series.

#### <Setting the menu lock to ON>

- (1) Opens the Detailed Settings screen.  
Click the "Detailed Settings" button on the Measurement screen to open the Detailed Settings screen.
- (2) Set the menu lock to ON.  
Click ON for the "Menu Lock" item.
- (3) Save the settings.  
Once you are finished configuring this function and any other settings, click the "OK" button on the Detailed Settings screen to save the settings.
- (4) The Communication test screen will be displayed.  
Carry out a communication test. If a communication test is not needed because the balance connection and communication settings have not been changed, you can click "OK" to close the Communication test screen. Refer to "3.2. Communication test function" for more details on communication tests.
- (5) The balance will be locked.  
The balance will lock when the Communication test screen is closed.



 **Note** Even if the menu lock is ON, if you open the Detailed Settings screen, the balance will be unlocked and the balance will be in standby mode. When you close the Detailed Settings screen and the Communication test screen, the balance will be locked again.

#### <Setting the menu lock to OFF>

- (1) Open the Detailed Settings screen.  
Click the "Detailed Settings" button on the Measurement screen to open the Detailed Settings screen. When the Detailed setting screen is opened, the balance is unlocked and the balance is put into standby mode.
- (2) Set the menu lock to OFF.  
Click OFF for the "Menu Lock" item.
- (3) Save the settings.

Once you are finished configuring this function and any other settings, click the "OK" button on the Detailed Settings screen to save the settings.

- (4) The communication test screen will open.

Carry out a communication test. Since the balance is in the standby mode, press the Power key of the balance before carrying out a communication test.

If you have not changed the connection with the balance or the communication settings and you do not need the communication test, press "OK" to close the Communication test screen. For details on the communication test, refer to "3.2.Communication test function"

- (5) Data can be collected with the menu lock released.



**Note** The balance is unlocked when the Detailed setting screen is opened, but unless the "Menu Lock" setting is set to OFF, the balance will be locked again when the Detailed setting screen and Communication test screen are closed.

### 3.1.10 Data collection interval settings

This function can be used to set the interval at which to collect data. Refer to "4.2 Continuous data collection <Data collection interval settings>" for more details.

Menu Lock (AP series only)  
☐ ON ☒ OFF  
Output Interval  
0 minutes 1 seconds

### 3.1.11. Close the Detailed Settings screen.

The Detailed Settings screen can be closed using the two methods below.

<Saving settings and closing the Detailed Settings screen>

- (1) Close the Detailed Settings screen

Click the "OK" button on the Detailed Settings screen. Setting changes will be saved, and the Detailed Settings screen will close.

- (2) Save the file (first time only)

After starting Multi-Balance\_Collect.xltn, when the first time setting changes are complete (after clicking the "OK" button on the Detailed Settings screen) a "Save as" dialog box will be displayed. Enter your desired file name and save the file. The "Save As" dialog box will not be displayed when the setting changes are completed for the second and subsequent times.

- (3) The Communication test screen will be displayed.

Carry out a communication test. Close the Communication test screen if a communication test is not necessary. Refer to "3.2.Communication test function" for more details on communication tests.

- (4) Keep files that have completed various settings.

Before starting data collection, copy and save the Excel file that you confirmed in the communication test in step (2) that there is no problem with the connection. If you keep the files that have not started data collection, you do not need to make detailed settings when retrieving data from the beginning in the same connection environment.


- (5) The Measurement screen will be displayed.  
Measurement can now be carried out with the changed settings applied.

<Closing the Detailed Settings screen without saving settings>

- (1) Close the Detailed Settings screen  
Click on "Cancel" or the × button on the top right of the Detailed Settings screen. The Detailed Settings screen will close without saving settings.
- (2) The Measurement screen will be displayed.  
The Measurement screen will be displayed without any of the changed settings applied.

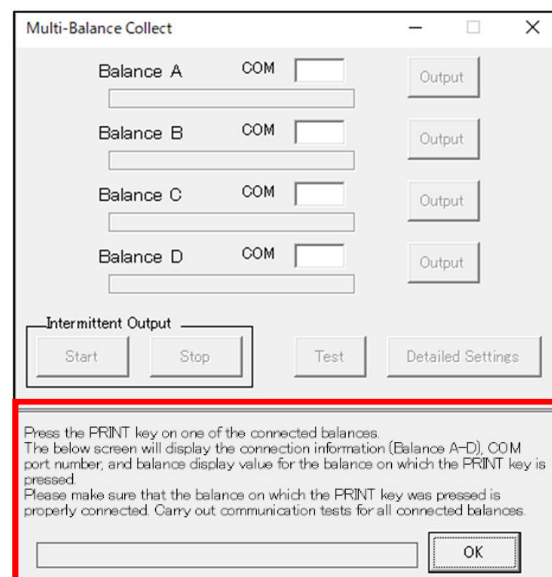
### 3.2. Communication test function

This function can be used to verify if the balance data is transmitted correctly and if the data from the connected balance is recorded to the expected MBC data sheet column. When changing the connected balance or when continuing to collect data to the same file after some amount of time has lapsed, there is a possibility of using the incorrect settings for the connected balance, or other connection errors occurring. Implement a communication test to prevent these type of errors.

 **Note** Be sure not to use balance auto print function or interval timer functions when implementing a communication test. Refer to "1.3.1. Multi-Balance Collect usage precautions" Item B) for more details.

- (1) Open the Communication test screen.  
Click one of the "Test" buttons on the Measurement screen.
- (2) The communication test screen will open.  
The Communication test screen will open below the Measurement screen (the area outlined in red in the figure to the right).
- (3) Start a communication test.  
Press the PRINT key on one of the connected balances.
- (4) Data from the balance will be displayed on the Communication test screen.  
The Communication test screen will display the connection information (Balance A-D), COM port number, and balance display value for the balance on which the PRINT key is pressed.
- (5) Verify that the displayed data is correct.  
Verify the following items and check that there are no problems.

- Does the connection information (Balance A-D) match the connections set in "3.1.2. Specifying the balance for which to configure communication settings"?
- Do the COM port number verified in "2.2. Balance and PC connection" and the connected balance match?
- Do the display value on the balance on which the PRINT key was pressed and the value displayed on the Communication test screen match?



- (6) Carry out communication tests for each balance.  
Carry out communication tests for all connected balances according to steps (3) to (5).
- (7) Close the Communication test screen.  
If there are no problems with the communication test, click "OK" or the "×" in the top right corner to close the Communication test screen.

The Communication test screen will be displayed automatically in the following cases.

- When "OK" is clicked on the Detailed Settings screen.
- When a file (a file with communication settings already configured) is opened in which data was collected in Multi-Balance Collect and which was saved under a new file name (saved as).

If a communication test is not needed because the balance connection and communication settings have not been changed, you can click "OK" to close the Communication test screen.



**Note** If any problems are found when verifying, check the COM port number and communication settings, and reconfigure as necessary according to the steps in "2.2. Balance and PC connection" and from "3.1.2. Specifying the balance for which to configure communication settings" to "3.1.5. MBC and balance communication settings".

## 4. Data collection in Multi-Balance Collect

The data collection methods in Multi-Balance Collect (Hereinafter referred to as "MBC") are listed below.

To collect data 1 time via PC operation → Go to "4.1.One time data collection"

To continuously collect data at regular intervals → Go to "4.2.Continuous data collection"

To collect data via balance operation → Go to "4.3.Data collection via balance operation"

To record calibration results → Go to "4.4.Automatic collection of calibration results"

To collect MOC63u measurement data → Go to "4.5.MOC63u data collection"



**Note** When using MBC, set the connected balance to the Standard measurement mode (normal measurement mode which does not use specific gravity measurement or other application functions).



**Caution**

- As the amount of collected data increases, Excel's processing speed may decrease, so it is recommended to switch to a new file each day.
- Refer to "1.3. Precautions" before starting to collect data with MBC.
- Refer to "8. Troubleshooting" when MBC data collection is not carried out correctly.

### 4.1. One time data collection

This function can be used to collect measurement values from the connected balance one time each time the "Output" button on the Measurement screen is clicked. Data is collected for the balance connected to the COM port corresponding to the button that is clicked. This allows for collection of data from multiple balances connected to a PC at desired times via PC operation.



**Note** This function cannot be used on the MOC63u.

(1) Connect the balance and MBC.

Refer to "2. Setup" and "3. Multi-Balance Collect settings".

(2) Open the Measurement screen.

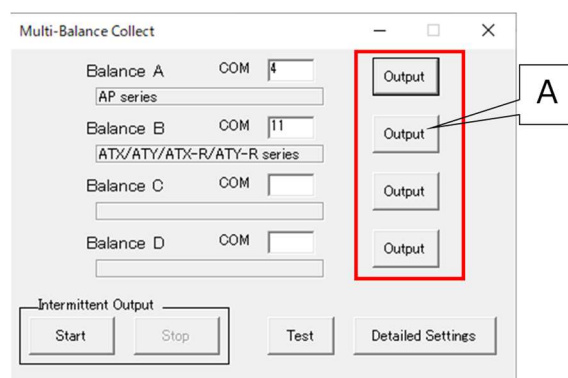
If on the Detailed Settings screen, after configuring settings, click "OK" to open the Measurement screen.

(3) Collect measurement values.

Click one of the "Output" buttons on the Measurement screen.

(4) Write the measurement value to Excel.

The data for the balance connected to COM port for which the "Output" button is clicked will be collected one time. For example, clicking the "Output" button (2nd from the top) marked A in the figure to the right will collect measurement values 1 time in the "Data for 2nd balance" column of the below figure.




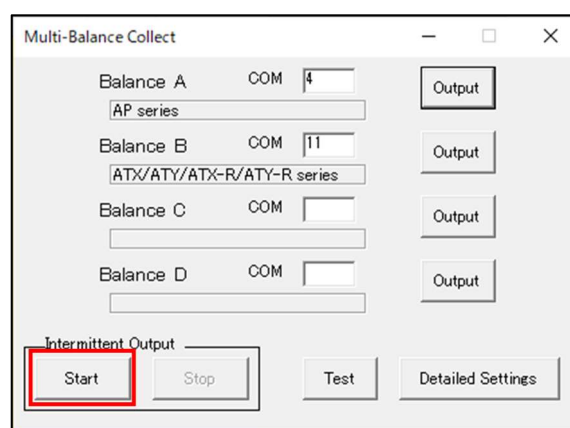


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	<p>Precautions</p> <ul style="list-style-type: none"> <li>Carry out a communication test to make sure that the connection to the balance is correct before collecting data.</li> <li>Do not edit Excel files during data collection.</li> <li>Once the data collected reaches 100,000 rows, please switch to a new file. In addition, if carrying out data collection across multiple consecutive days, switch to a new file for each day.</li> <li>Shimadzu Corporation accepts no responsibility nor liability for any problems which may occur related to the use of The Software. It is recommended that you always create backups of any important data, programs, or other items before use.</li> </ul> <p>Refer to "1.1.Disclaimers", "1.3.Precautions", "1.4.Software license agreement" in the instruction manual for more details.</p>															
2	Balance A				Balance B				Balance C				Balance D			
3	Date	COM	Stable	Weight	Date	COM	Stable	Weight	Date	COM	Stable	Weight	Date	COM	Stable	Weight
4	2020/8/4 17:42:04	32 S		0.0000 g	2020/8/4 17:42:04	21 S		0.00000g	2020/8/4 17:42:04	20 S		0.0000g	2020/8/4 17:42:04	29 S		0.003g
5	2020/8/4 17:42:05	32 S		0.0000 g	2020/8/4 17:42:05	21 S		0.00000g	2020/8/4 17:42:05	20 S		0.0000g	2020/8/4 17:42:05	29 S		0.003g
6	2020/8/4 17:42:06	32 S		0.0000 g	2020/8/4 17:42:06	21 S		0.00000g	2020/8/4 17:42:06	20 S		0.0000g	2020/8/4 17:42:06	29 S		0.003g
7	2020/8/4 17:42:07	32 S		0.0000 g	2020/8/4 17:42:07	21 S		0.00000g	2020/8/4 17:42:07	20 S		0.0000g	2020/8/4 17:42:07	29 S		0.003g
8	2020/8/4 17:42:08	32 S		0.0000 g	2020/8/4 17:42:08	21 S		0.00000g	2020/8/4 17:42:08	20 S		0.0000g	2020/8/4 17:42:08	29 S		0.003g
9	2020/8/4 17:42:09	32 S		0.0000 g	2020/8/4 17:42:09	21 S		0.00000g	2020/8/4 17:42:09	20 S		0.0000g	2020/8/4 17:42:09	29 S		0.003g
10	2020/8/4 17:42:10	32 S		0.0000 g	2020/8/4 17:42:10	21 S		0.00000g	2020/8/4 17:42:10	20 S		0.0000g	2020/8/4 17:42:10	29 S		0.003g
11	2020/8/4 17:42:11	32 S		0.0000 g	2020/8/4 17:42:11	21 S		0.00000g	2020/8/4 17:42:11	20 S		0.0000g	2020/8/4 17:42:11	29 S		0.003g
12	2020/8/4 17:42:12	32 S		0.0000 g	2020/8/4 17:42:12	21 S		0.00000g	2020/8/4 17:42:12	20 S		0.0000g	2020/8/4 17:42:12	29 S		0.003g
13	2020/8/4 17:42:13	32 S		0.0000 g	2020/8/4 17:42:13	21 S		0.00000g	2020/8/4 17:42:13	20 S		0.0000g	2020/8/4 17:42:13	29 S		0.003g
14	2020/8/4 17:42:14	32 S		0.0000 g	2020/8/4 17:42:14	21 S		0.00000g	2020/8/4 17:42:14	20 S		0.0000g	2020/8/4 17:42:14	29 S		0.003g
15	2020/8/4 17:42:15	32 S		0.0000 g	2020/8/4 17:42:15	21 S		0.00000g	2020/8/4 17:42:15	20 S		0.0000g	2020/8/4 17:42:15	29 S		0.003g
16	2020/8/4 17:42:16	32 S		0.0000 g	2020/8/4 17:42:16	21 S		0.00000g	2020/8/4 17:42:16	20 S		0.0000g	2020/8/4 17:42:16	29 S		0.003g
17	2020/8/4 17:42:17	32 S		0.0000 g	2020/8/4 17:42:17	21 S		0.00000g	2020/8/4 17:42:17	20 S		0.0000g	2020/8/4 17:42:17	29 S		0.003g
18	2020/8/4 17:42:18	32 S		0.0000 g	2020/8/4 17:42:18	21 S		0.00000g	2020/8/4 17:42:18	20 S		0.0000g	2020/8/4 17:42:18	29 S		0.003g

## 4.2. Continuous data collection

This function can be used to continuously collect measurement value data at regular intervals. This function automatically collects measurement values at set intervals without needing to click the "Output" button for each measurement. This is convenient for use when recording changes over time from multiple balances such as when measuring changes in weight resulting from water evaporation.

 **Note** This function cannot be used on the MOC63u.



The dialog box "Multi-Balance Collect" contains settings for four balances (A, B, C, D). Each balance has a "COM" dropdown menu and an "Output" button. Balance A is set to COM 4, Balance B to COM 11, and both C and D are set to COM. Below these, there is an "Intermittent Output" section with "Start", "Stop", "Test", and "Detailed Settings" buttons. The "Start" button is highlighted with a red box.

### <Data collection interval settings>

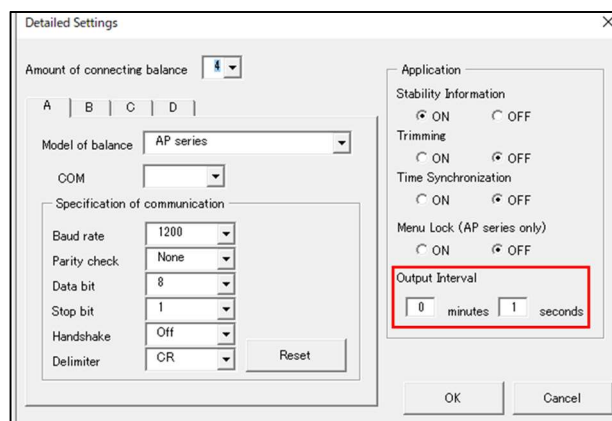
Open the Detailed Settings screen. If on the Measurement screen, click the "Detailed Settings" button to open the Detailed Settings screen.

#### (1) Set the data collection interval.


Set the data collection interval under "Output Interval" on the Detailed Settings screen. The interval can be set from 0 minutes 1 second to 99 minutes 59 seconds and the default value is 0 minutes 1 second. The interval cannot be set to 0 minutes 0 seconds, the minutes cannot be set to values of 100 minutes or higher, and the seconds cannot be set to values of 60 seconds or higher.


#### (2) Save the settings.

Click the "OK" button on the Detailed Settings screen. The Measurement screen will be displayed after clicking "OK".



The "Detailed Settings" dialog box shows various configuration options. On the right side, under "Application", the "Output Interval" is set to 0 minutes and 1 seconds, which is highlighted with a red box. Other settings include "Amount of connecting balance", "Model of balance" (AP series), "COM", "Specification of communication" (Baud rate, Parity check, Data bit, Stop bit, Handshake, Delimiter), and "Stability Information" (Trimming, Time Synchronization, Menu Lock).

 **Note** Will be set to 0 minutes 1 second if "OK" is clicked at 0 minutes 0 seconds.

 **Caution** Data collection may not be able to be carried out at the interval set here depending on variables such as the number of balances connected, communication speed (baud rate), etc. Check "8. Troubleshooting", and if the problem still cannot be resolved, try lowering the baud rate in the communication settings.

<Starting and stopping continuous data collection>

- (1) Connect the balance and MBC.

Refer to "2. Setup" and "3. Multi-Balance Collect settings".

- (2) Open the Measurement screen.

If on the Detailed Settings screen, after configuring settings, click "OK" to open the Measurement screen.

- (3) Start continuous data collection.


Click the "Intermittent Output" "Start" button on the Measurement screen. The following message will be displayed when "Start" is clicked. Check the balance settings and PC settings according to the displayed items. For details, refer to [About the message at the start of continuous data collection] below.

- (4) Measurement values will be automatically collected at regular intervals.

Each of the balances connected will be identified and measurement values will be collected as shown in the figure below.

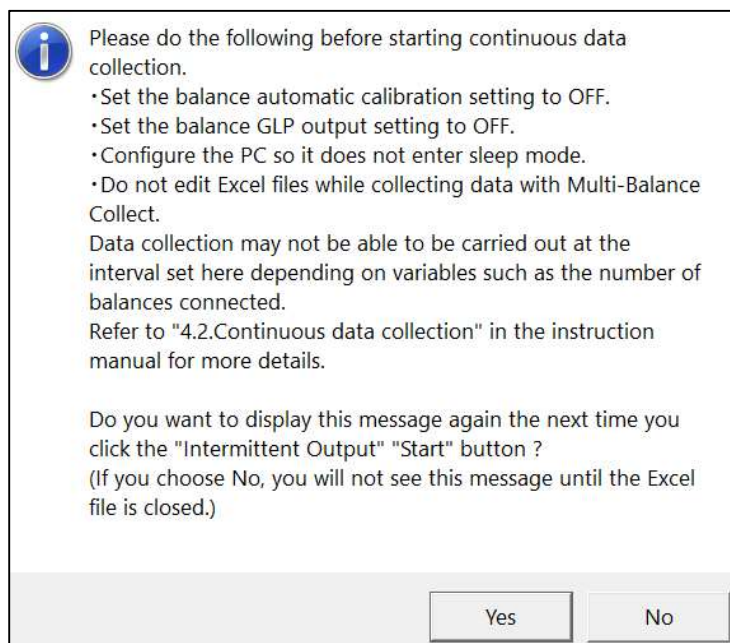
- (5) Stop continuous data collection.

Click the "Intermittent Output" "Stop" button on the Measurement screen to stop continuous data collection.

 **Note**

- The Detailed Settings screen cannot be opened by clicking the "Detailed Settings" button while continuous data collection is running.
- One time data collection can still be carried out during continuous data collection by clicking the "Output" buttons on the Measurement screen.

[ About the message at the start of continuous data collection ]



The message displayed at the start of continuous data collection (above figure), the balance settings to be checked, and the PC settings are described below.

- **Set the balance automatic calibration setting to OFF.**

If the balance is set to carry out calibration automatically, automatic calibration will be carried out periodically. Measurement value data cannot be output from the balance while the balance is carrying out calibration. As such, data will not be able to be collected during calibration, even during continuous data collection with MBC.

[Countermeasures]

Set the balance automatic calibration setting to OFF. Refer to the instruction manuals for each balance for balance setting change methods.

- **Set the balance GLP output setting to OFF.**

If the balance GLP output setting (setting which outputs calibration reports) is ON, more time will be required to output data from the balance than compared with when the GLP output setting is OFF, so it may not be possible to collect data at the set intervals.

[Countermeasures]

Set the balance GLP output setting (setting which outputs calibration reports) to OFF. Refer to the instruction manuals for each balance for balance setting change methods.

- **Configure the PC so it does not enter sleep mode.**

If the PC enters sleep mode, or otherwise interrupts the power supply to the USB ports, data will not be able to be collected with MBC, so data will not be able to be collected even during continuous data collection.

[Countermeasures]

Change the PC power settings so that the power supply to the USB ports is not unintentionally interrupted. Refer to "10. Changing PC power option settings" for setting change methods.


- **Do not edit Excel files while collecting data with Multi-Balance Collect.**


Data cannot be collected with MBC while an Excel file is being edited, so data will not be able to be collected even during continuous data collection.

[Countermeasures]

Do not edit Excel files during data collection with MBC.

If you wish to display this message again when next clicking the intermittent output Start button after handling the above items, click "Yes". If you do not wish to display the above message again until the Excel file is closed, click "No".

 **Caution** The automatic calibration setting cannot be set to OFF in some cases when using type approval model balances. Please note that in such cases data will not be able to be collected during calibration.

 **Note** If the Excel file is opened for reading only, then other Excel files can be opened. In addition, editing can be carried out during data collection using applications other than Excel (notepad, Word, etc.).

#### 4.3. Data collection via balance operation

This function can be used to collect measurement value data by pressing the PRINT key, etc. on a connected balance. For example, when carrying out inspection work using different balances installed on multiple production lines, measurement data can be collected on a single PC using only operation of the individual balances on each line. Balance measurement value stability information cannot be recorded using data collection via balance operation (Stability information may be recorded for some balance models.)

 **Note** This function cannot be used on the ELB Series or MOC63u.

(1) Connect the balance and MBC.

Refer to "2. Setup" and "3. Multi-Balance Collect settings".


(2) Press the balance Print key.

(3) Write the measurement value to the Excel file.

The balance will be identified and measurement values will be collected in the same manner as in "4.1. One time data collection" and "4.2. Continuous data collection".

#### 4.4. Automatic collection of calibration results

This function can be used to automatically collect balance calibration results. Calibration results are recorded to the "CAL" sheet. Calibration records for multiple balances can be managed collectively. This allows for creation of records of daily calibration implementation and automatic calibration which makes it possible to search past calibration records when a problem occurs.

 **Note**

- This function cannot be used on the BL Series or ELB Series.
- It is necessary to enable the balance's GLP output setting (setting which outputs calibration reports) to automatically collect calibration results. Refer to the instruction manuals for each balance for balance setting change methods.

- (1) Connect the balance and MBC.

Refer to "2. Setup" and "3. Multi-Balance Collect settings".

- (2) Enable the balance GLP output setting.

Refer to the instruction manual for each balance for balance GLP output setting change methods.

- (3) Carry out calibration.

The calibration results will be recorded on the "CAL" sheet when balance calibration is carried out (Refer to figure on the right and figure below). Refer to the instruction manuals for each balance for calibration implementation methods.



Balance A			Balance B		
Date	COM	Data	Date	COM	Data
2020/06/05 12:34:27	4	-----	2020/06/05 12:34:23	5	-----
2020/06/05 12:34:27	4	CAL-INTERNAL	2020/06/05 12:34:23	5	CAL-INTERNAL
2020/06/05 12:34:28	4	-----	2020/06/05 12:34:23	5	-----
2020/06/05 12:34:28	4	Shimadzu Corp.	2020/06/05 12:34:23	5	Shimadzu Corp.
2020/06/05 12:34:28	4	-----	2020/06/05 12:34:23	5	-----
2020/06/05 12:34:28	4	TYPE AP324W	2020/06/05 12:34:23	5	TYPE AP125WD
2020/06/05 12:34:28	4	SN D000000371	2020/06/05 12:34:23	5	SN D316200012
2020/06/05 12:34:29	4	BALID 0000	2020/06/05 12:34:24	5	BALID 0000
2020/06/05 12:34:29	4	-----	2020/06/05 12:34:24	5	-----
2020/06/05 12:34:29	4	DATE 2020 Jun.05	2020/06/05 12:34:24	5	DATE 2020 Jun.05
2020/06/05 12:34:29	4	TIME 12:34:02	2020/06/05 12:34:24	5	TIME 12:33:56
2020/06/05 12:34:29	4	-----	2020/06/05 12:34:24	5	-----
2020/06/05 12:35:41	4	-----	2020/06/05 12:36:16	5	-----
2020/06/05 12:35:41	4	REF = 200.00000g	2020/06/05 12:36:17	5	REF = 60.00000g
2020/06/05 12:35:42	4	BFR = 200.0012 g	2020/06/05 12:36:17	5	BFR = 60.0001 g
2020/06/05 12:35:42	4	AFT = 200.0000 g	2020/06/05 12:36:17	5	AFT = 60.0000 g
2020/06/05 12:35:42	4	-----	2020/06/05 12:36:17	5	-----
2020/06/05 12:35:42	4	-COMPLETE	2020/06/05 12:36:17	5	REF = 120.00000g
2020/06/05 12:35:42	4	-----	2020/06/05 12:36:17	5	BFR = 120.0002 g

Data for 1<sup>st</sup> balance

Data for 2<sup>nd</sup> balance

Calibration result records example



#### 4.5. MOC63u data collection

MOC63u measurement values are recorded on the "MOC" sheet. Stability information is not included when MOC63u data is collected. Measurement data from multiple MOC63u units can be centrally managed on a single PC. Moisture percentage measurement data will be automatically recorded by just connecting an MOC63u. Data from connected balances other than MOC63u can also be recorded even during recording of MOC63u measurement data.

- (1) Connect the MOC63u and MBC.

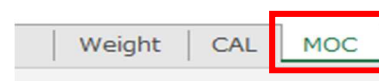
Refer to "2. Setup" and "3. Multi-Balance Collect settings".

- (2) Configure the MOC63u output method.

Configure the MOC63u measurement data output method. Refer to the MOC63u instruction manual for setting configuration methods.

- (3) Collect measurement data.

MOC63u measurement data is recorded on the "MOC" sheet (Refer to figure on the right and figure below). Refer to the MOC63u instruction manual for data collection methods.



Do not open the Detailed setting screen or Communication setting screen while collecting data with MOC63u. MOC63u data cannot be collected while the Detailed setting screen or Communication setting screen is open.

Balance A				Balance B			
Date		COM	Data	Date		COM	Data
2020/06/25 18:02:13	31	SHIMADZU CORP.		2020/06/25 18:04:34	30	SHIMADZU CORP.	
2020/06/25 18:02:13	31	TYPE MOC63u		2020/06/25 18:04:34	30	TYPE MOC63u	
2020/06/25 18:02:14	31	SN D209400056		2020/06/25 18:04:34	30	SN D209400062	
2020/06/25 18:02:14	31	ID 0000		2020/06/25 18:04:35	30	ID K000	
2020/06/25 18:02:14	31	CODE 0086		2020/06/25 18:04:35	30	CODE 0011	
2020/06/25 18:02:14	31	DATE 20-06-25		2020/06/25 18:04:35	30	DATE 20-06-25	
2020/06/25 18:02:15	31	TIME 18:02		2020/06/25 18:04:35	30	TIME 18:04	
2020/06/25 18:02:15	31	PNO. 1		2020/06/25 18:04:36	30	PNO. 0	
2020/06/25 18:02:15	31	UNIT M/W		2020/06/25 18:04:36	30	UNIT GRAM	
2020/06/25 18:02:16	31	MODE AUTO		2020/06/25 18:04:36	30	MODE TIME	
2020/06/25 18:02:16	31	TEMP 120C		2020/06/25 18:04:36	30	TEMP 50C	
2020/06/25 18:02:16	31	STOP 0.01 %		2020/06/25 18:04:37	30	STOP 00.15	
2020/06/25 18:02:16	31			2020/06/25 18:05:19	30		
2020/06/25 18:02:17	31	Wet W(g)	1.001	2020/06/25 18:05:19	30	Wet W(g)	0.993
2020/06/25 18:02:17	31			2020/06/25 18:05:19	30		
2020/06/25 18:02:17	31	TIME	M/W(%)	2020/06/25 18:05:19	30	TIME	GRAM
2020/06/25 18:02:18	31	00:00:00	0.00	2020/06/25 18:05:20	30	00:00:00	0.993
2020/06/25 18:02:23	31	00:00:05	0.00	2020/06/25 18:05:20	30	00:00:02	0.994
2020/06/25 18:02:28	31	00:00:10	0.00	2020/06/25 18:05:20	30	00:00:04	1.97

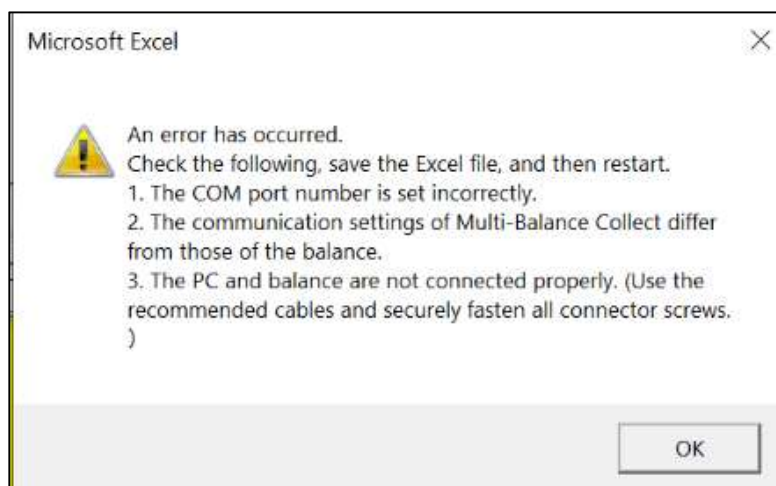
Data for 1<sup>st</sup> balance

Data for 2<sup>nd</sup> balance

MOC63u data collection results example

## 5. Error display

The following error message will be displayed when a communication error occurs between the PC and a balance. After verifying relevant settings and connections based on the displayed items, click the "OK" button. Clicking "OK" will only stop MBC operation (only the Excel macro will stop operating, the file will not be closed). Save the Excel file and then reopen the Excel file. If you restart the file in which the error occurred, the COM port information will be reset. If you want to restart data collection, set the COM port number again (refer to "3.1.4. COM port number setting").



Verify the following when the above error is displayed.

(1) The COM port number is set incorrectly.

⇒ The COM port setting may be incorrect. Reconnect the cable and verify the settings for the COM port to which the balance is connected (Refer to "2.2. Balance and PC connection" and "3.1.4. Setting the COM port number").

(2) The communication settings of Multi-Balance Collect differ from those of the balance.

⇒ The MBC communication settings may differ from those of the balance. Verify the communication settings of MBC and the balance (Refer to "3.1.5. Multi-Balance Collect and balance communication settings"). Refer to the instruction manuals for each balance for balance communication setting configuration methods.

(3) The PC and balance are not connected properly. (Use the recommended cables and securely fasten all connector screws.)

⇒ The PC and balance may not be connected properly. Use the recommended cables and securely fasten all connector screws (Refer to "2.1.1. Prepare connection cables").

## 6. Closing Multi-Balance Collect

- (1) Save collected data.

Save the collected data using "Save" or "Save as" in Excel.

- (2) Close Multi-Balance Collect.

Close the Excel file which is running Multi-Balance Collect. Click on the close button on the top right to close Excel. The file will be automatically overwritten and saved when closing Excel.



**Note** The close button on the top right of the Measurement screen cannot be clicked to prevent Multi-Balance Collect from being closed by accident.

## 7. Restarting Multi-Balance Collect

- (1) Open a file into which data has been collected with Multi-Balance Collect.

The file will open in the same state which it was saved in before Excel was closed. If the communication settings have been configured for the file, the Communication test screen will be displayed.

- (2) Carry out a communication test

Carry out a communication test to ensure there are no connection errors with the connected balance. Refer to "3.2 Communication test function" for more details on communication tests.

- (3) Restart data collection.

Close the Communication test screen and restart data collection.



- Note** • If any problems are found with the communication test results, check the COM port number and communication settings, and reconfigure as necessary according to the steps in "2.2. Balance and PC connection" and from "3.1.2. Specifying the balance for which to configure communication settings" to "3.1.5. MBC and balance communication settings".
- If you want to begin recording data at the beginning of the data file, rather than part way through the data file, use a new data file instead. Refer to "9.4. Recording data from the beginning of the file instead of part way through" for more details.



## 8. Troubleshooting

Verify the following items when data cannot be collected correctly with Multi-Balance Collect (Hereinafter referred to as "MBC").

Issue	Cause	Countermeasure
Data is not read into Excel.	Are the PC power settings configured so that power supply to the USB ports is interrupted after a set amount of time? Causes of automatic interruption of power supply to USB ports are as follows. · Sleep mode · USB selective suspend	Change the PC power option settings so that the power supply to the USB ports is not automatically interrupted. Refer to "10. Changing PC power option settings" for details.
	Is the balance in a state in which it cannot output weight values? Some potential states in which the balance cannot output weight values are listed below. · The balance is calibrating · An error message is displayed · The menu screen is being operated · It is in an applied measurement mode · It is in the menu display state · It is not turned on	Verify that the balance is receiving power and turned on, and set the balance to general measurement mode (normal measurement mode which does not use specific gravity measurement or other application functions). Refer to "1.3.1. Multi-Balance Collect usage precautions" Item C). Refer to the instruction manuals for each balance for balance operation methods.
	Are the balance and PC connected using the correct cable?	Prepare the correct cables for each model of balance to be connected. Refer to "2.1.1. Prepare connection cables" for more details.
	Is the USB driver installed correctly?	Verify that the USB driver is installed correctly, and if it is not installed correctly, reinstall the driver. Refer to "2.1.3. Install the USB driver" for more details.
	Is the COM port number setting correct? The COM port number may change just by changing which USB port is used on the PC.	Verify that the COM port number setting is correct, and change the setting if it is incorrect. Refer to "2.2. Balance and PC connection" and "3.1.4. Setting the COM port number" for more details.
	Are the MBC and balance communication settings correct?	Verify that the MBC and balance communication settings are correct, and change the settings if they are incorrect. Refer to "3.1.5. Multi-Balance Collect and balance communication setting" for more details.
	Is the MBC connected balance (Balance A-D) correct? (Ex.: Connecting as Balance B when intending to connect as Balance A)	Carry out a communication test to verify that the connected balance (Balance A-D) is correct. Change the settings if they are incorrect. Refer to "3.2. Communication test function" and "3.1.2. Specifying the balance for which to configure communication settings" for more details.

	Is an Excel file being edited? MBC cannot be used to collect data while an Excel file is being edited.	Do not edit Excel files during data collection with MBC. Refer to "1.3.1. Multi-Balance Collect usage precautions" Item C) for more details.
	Does it take a long time to save the Excel file? As the amount of data increases, Excel file operations become slower, which can make saving the file take a long time. Data cannot be collected while saving a file.	Make sure to not excessively increase the amount of data collected in Excel. Refer to "1.3.1. Multi-Balance Collect usage precautions" Item D) for more details.
Reading of data into Excel is slow.	Is the balance GLP setting set to ON? If the balance GLP output setting (setting which outputs calibration reports) is ON, more time will be required to output data from the balance than compared with when the GLP output setting is OFF.	Set the balance GLP output setting (setting which outputs calibration reports) to OFF. Refer to the instruction manuals for each balance for balance setting change methods.
	Are Excel file operations slow? As the amount of data collected increases, Excel file operations may become slower.	Make sure to not excessively increase the amount of data collected in Excel. Refer to "1.3.1. Multi-Balance Collect usage precautions" Item D) for more details.
	Is the communication settings handshake setting set to anything other than "OFF"? If the handshake setting is set to anything other than "OFF", communication with the balance may become slower.	Set the balance and MBC handshake setting to "OFF". Refer to "3.1.5. Multi-Balance Collect and balance communication setting" for more details.
The balance display value and collected data number of digits are different.	Has the Excel "Cell format" been changed? The balance display values and collected data number of decimal places displayed can differ depending on the cell format.	Set the Excel "Cell format" to "Text".

## 9. FAQ

Frequently Asked Questions regarding Multi-Balance Collect (Hereinafter referred to as "MBC") are listed below.

### 9.1. I want to convert collected data into graphs.

An explanation of how to convert data collected with MBC into graphs is provided below.

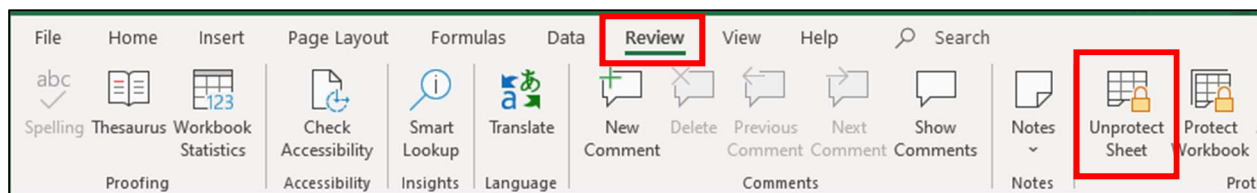
- Use the Graph conversion example Excel file.  
Use the "Multi-Balance\_Collect\_Graph.xltn" located inside the folder into which the "Multi-Balance\_Collect.zip" you downloaded in "2.1.4. Downloading Multi-Balance Collect" was extracted to collect data.  
"Multi-Balance\_Collect\_Graph.xltn" collects data in the same manner as "Multi-Balance\_Collect.xltn", but also automatically creates graphs. The graphs that can be created with "Multi-Balance\_Collect\_Graph.xltn" are as follows.
  - A) Graphs which indicate changes in balance weight values over time (4 graphs of Balances A through D)  
These are graphs which use the weight value as the vertical axis and the times at which the weight value data was collected as the horizontal axis. A total of 4 graphs will be created, one for each balance (Balances A through D). These graphs allow for verification of changes in weight values at the precise times when data was collected. Use the graphs in B) below to compare data collected from all 4 balances at the same time.
  - B) Graphs which collect data from all 4 balances A through D in a single graph.  
These are graphs which use the weight value as the vertical axis and the number of weight value data as the horizontal axis. These graphs are convenient for seeing differences in the weight values of the 4 balances collected through continuous data collection. However, because the horizontal axis is not the time as which the data was collected, these graphs cannot be used when you want to see the precise time at which weight values changes occurred, or to graph data which was not collected at regular intervals.



Note

- Change the appearance of the graph, such as the display range and scale settings for the vertical and horizontal axes of the automatically created graph, as necessary.
- Data collected by MOC63u cannot be automatically graphed.
- Creating graphs of other desired types  
You can also create graphs of other desired types from collected data.
  - (1) Advance preparation.  
Turn the trimming function ON. Refer to "3.1.7 Trimming function" for trimming function configuration methods.
  - (2) Collect data.  
Collect data according to the steps in "4.1. One time data collection", "4.2. Continuous data collection", and "4.3. Data collection via balance operation".
  - (3) Unprotect the sheet.  
The data collected with MBC is in a text format. Graphs cannot be created using text format data, so unprotect the sheet in order to convert the data to a numerical value format.

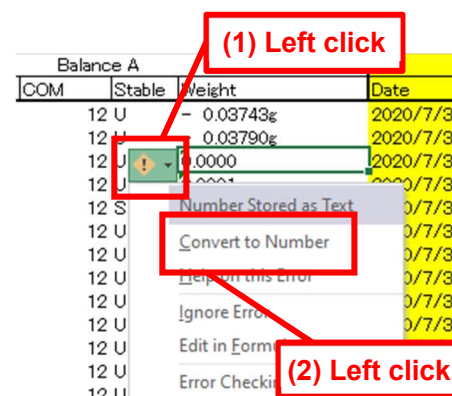
From the Excel ribbon select the "Review" tab, and then left click the "Unprotect sheet" button.



- (4) Convert the collected data to a numerical value (number) format.

As shown in the figure to the right, if you select a cell to be converted to a numerical value format, an exclamation point "!" will be displayed, and left clicking this mark will display a menu. Left click on "Convert to number" in the displayed menu to convert the cell data to a number.

Convert all of the cells to be graphed to numbers.



- (5) Create a graph from the data converted to numbers.

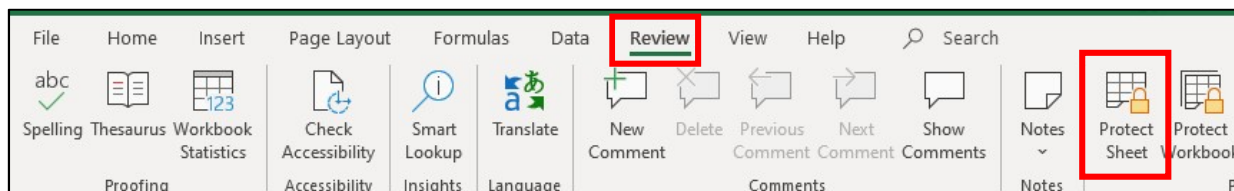
The data converted to numbers can be used to create graphs of other desired types.



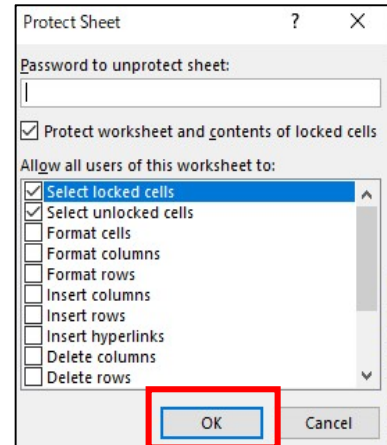
**Note** When changing to a number format, the number of decimal places of the balance display value and that displayed in Excel may differ. To match the display to that of the balance, set the number of decimal points displayed in Excel to the same as the number of decimal points displayed on the balance.



**Caution** Sheets are protected in MBC in order to prevent loss of collected data resulting from unintended sheet edits. After you finish creating the graphs, re-protect the sheet before collecting data again. Protect the sheet using the following procedure. From the Excel ribbon select the "Review" tab, and then left click the "Protect sheet" button.



The "Protect Sheet" dialog will be displayed, so left click "OK" to protect the sheet.



## 9.2. I want to periodically save data automatically

Excel is equipped with a built-in automatic file save function. The default setting value for this function saves files every 10 minutes.

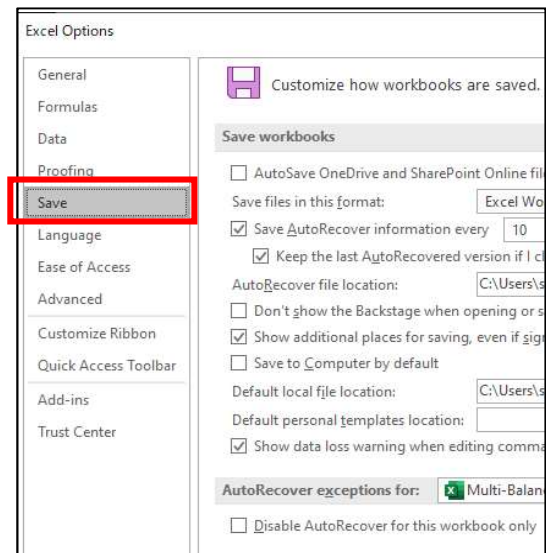
Use the following procedure to change the automatic save interval.

- (1) Open the Excel options.

Left click on the Excel "File" tab then left click on "Options".

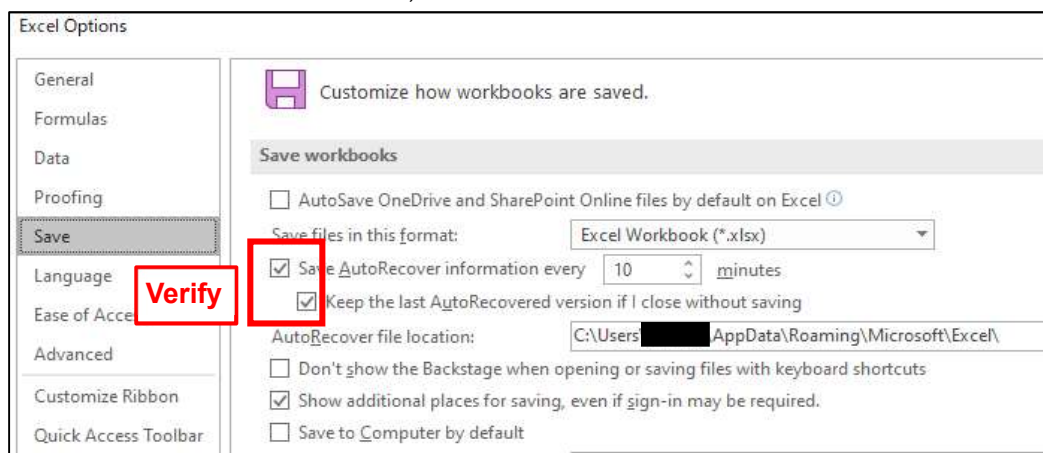
- (2) Left click on "Save" in the "Excel Options".

The "Excel Options" menu will be displayed, so left click on "Save".



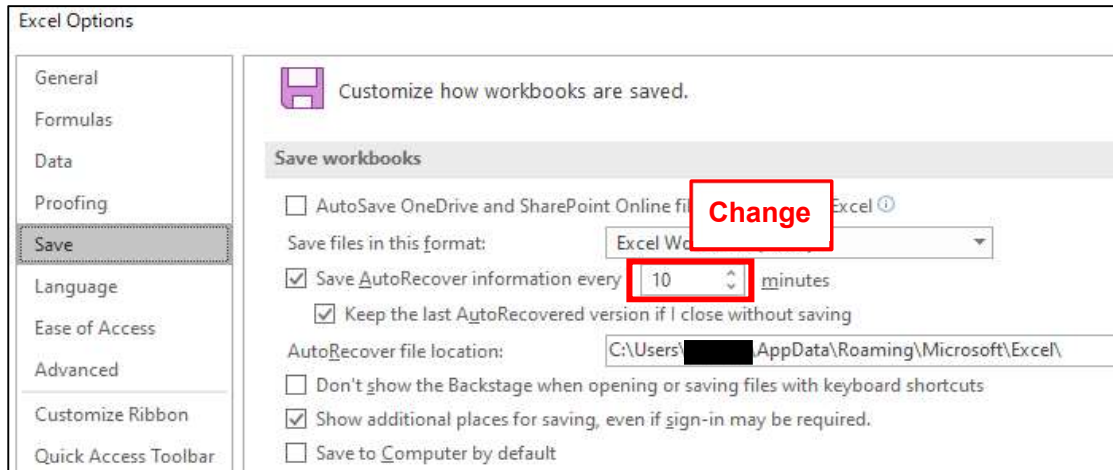
- (3) Verify that the "Save AutoRecover information every 10 minutes" and "Keep the last autorecovered version if I close without saving" item checkboxes are checked.

If the checkboxes are not checked, check them.



(4) Change the automatic save interval.

Set your desired automatic save interval time. Shortening this time will reduce the loss of data when the file is accidentally closed without saving. However, frequently saving can cause Excel to operate more slowly depending on the performance of the PC being used.



(5) Close the "Excel Options".

Click "OK" to close the "Excel Options".



Note Refer to "9.3 I want to recover data from an Excel file that was not closed normally" for information on how to recover an automatically saved version.

### 9.3. I want to recover data from an Excel file that was not closed normally

You can recover the version of a file saved by the Excel automatic save function when an Excel file is closed without being overwritten and saved. The default automatic save interval value is 10 minutes, and can be changed. Refer to "9.2. I want to periodically save data automatically" for change methods.

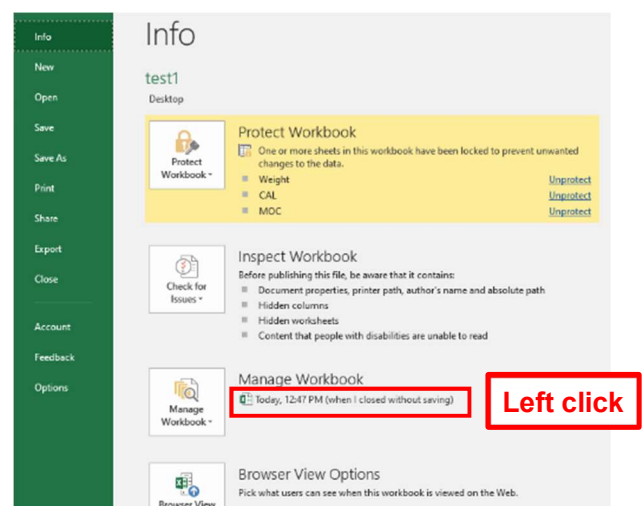
(1) Open an Excel file which was closed without being saved.

(2) Open the Excel "Info" menu.

Left click on the Excel "File" tab to display the "Info" menu.

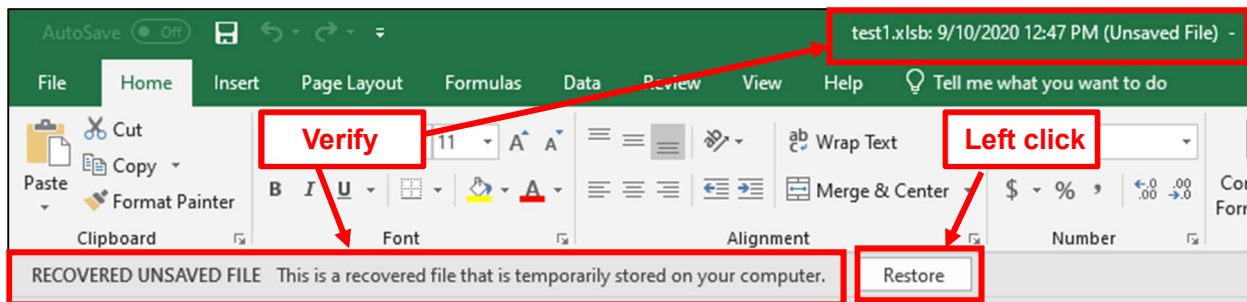
(3) Recover the automatically saved file.

Left click on the file on the "Info" panel outlined in red in the figure to the right (the file which says "Autorecovered").  
The blacked out section of the figure to the right will be the file name.



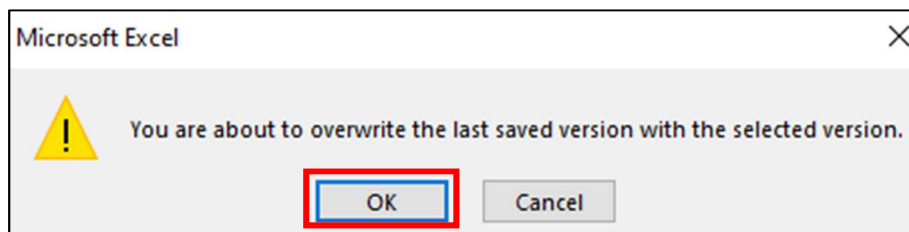
- (4) The automatically saved file will open.

The automatically saved file will open. Verify that the sections indicating the file is an autorecovered file are displayed as outlined in red below, and left click on the "Recover" button. The blacked out section of the figure will be the file name.



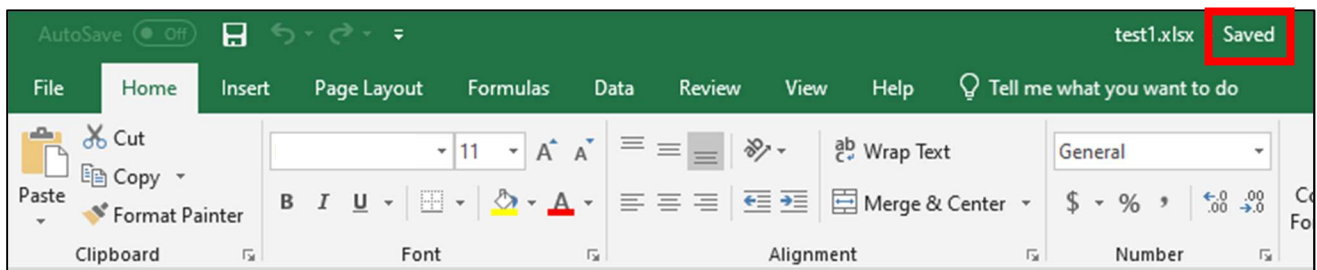
- (5) Save the recovered file.

The following warning message will be displayed, so verify and left click on "OK".



- (6) Verify that the recovered file has been successfully saved.

If the "Saved" message outlined in red below is displayed, the recovered file has been successfully saved.



#### 9.4. Recording data from the beginning of the file instead of part way through

To record data from the beginning of an Excel file instead of part way through, collect data in a new file.

- (1) Start a new Multi-Balance Collect (Hereinafter referred to as "MBC").  
Start "Multi-Balance\_Collect.xltn" according to the procedures in "2.3. Starting Multi-Balance Collect".
- (2) Configure the MBC detailed settings.  
Configure the detailed settings according to the procedures in "3.1.Multi-Balance Collect detailed settings".
- (3) Carry out a communication test  
Refer to "3.2 Communication test function" for more details on communication tests.
- (4) Start collecting data.  
Refer to "4. Data collection in Multi-Balance Collect".



**Note** If there are various set files saved in step ④ of <Save the settings and close the Detailed Settings screen> in "3.1.11.Close the Detailed Settings screen", there is no need to redo the settings. You can skip step (2) above by starting the configured file instead of the new file.



## 10. Changing PC power option settings

Methods for handling situations where data cannot be collected in Multi-Balance Collect due to PC power settings are explained below. The power supply to the USB ports may be interrupted after a set amount of time depending on the PC power settings. If the power supply to the PC USB ports is interrupted, it will not be possible to collect data in Multi-Balance Collect. Causes of automatic interruption of power supply to PC USB ports are as follows.

- Sleep mode
- USB selective suspend

Methods for changing settings so that USB port power supply is not automatically interrupted due to the above causes are explained below.

### 10.1. Method for changing the sleep settings

The procedure for disabling the setting which puts the PC into sleep mode if there is no input after a certain amount of time is as follows.

- (1) Open the "Power Options".

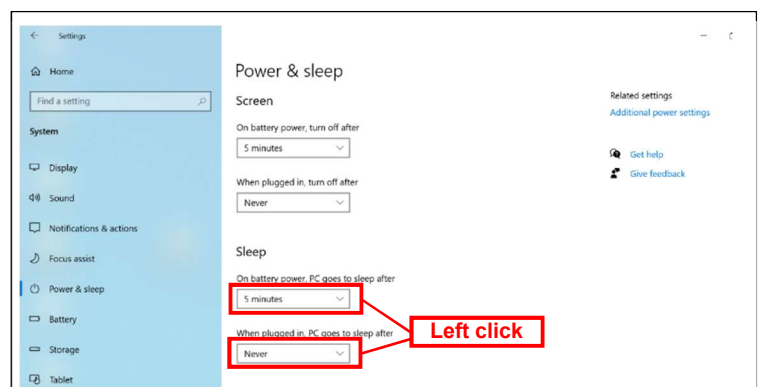
Right click on the "Start" button on the bottom left of the figure to the right, then left click on "Power Options".




- (2) Set "PC goes to sleep after" to "Never".

Left click on the pulldown menu for "When plugged in, PC goes to sleep after". Left click the "Never" option from the pulldown menu.

- (3) Close the Settings screen.  
After verifying that "When plugged in, PC goes to sleep after" is set to "Never", close the Settings screen.



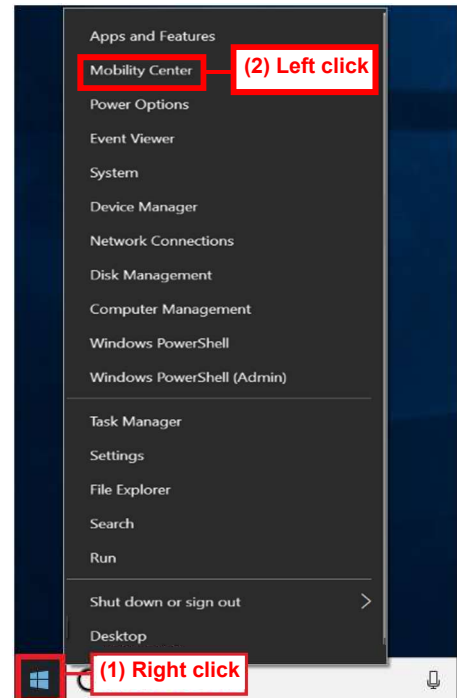
 **Note** For notebook PCs, there will be 2 different menus displayed, one for "When plugged in" and one for "On battery power", so set the time for both items.

## 10.2. Method for changing USB selective suspend settings

The procedure for disabling the setting which disables power to the PC USB powers after a certain amount of time is as follows.

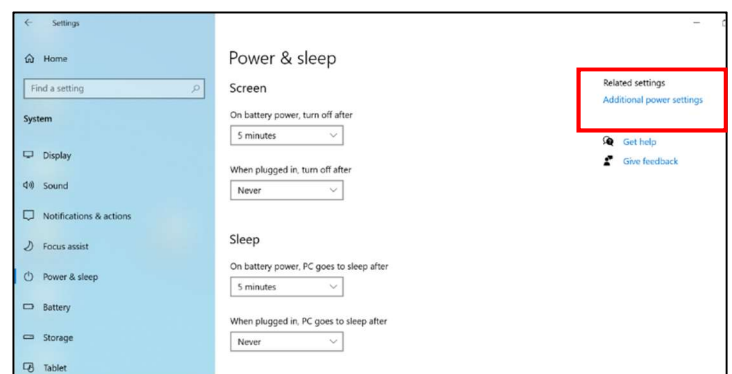
(1) Open the "Power Options".

Right click on the "Start" button on the bottom left of the figure to the right, then left click on "Power Options".



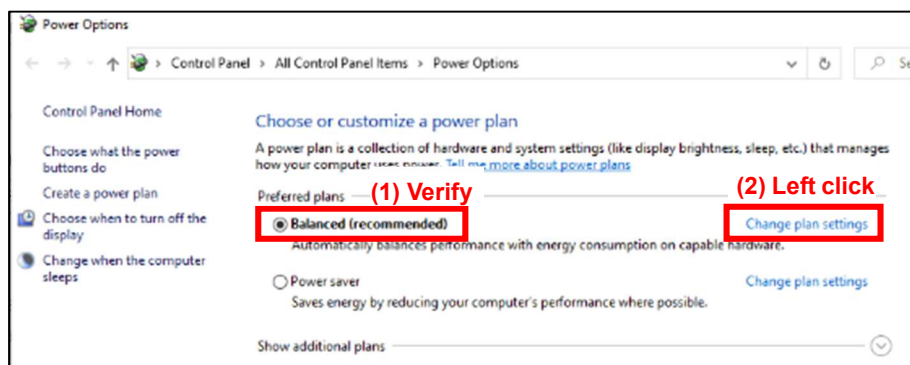
(2) Click on "Additional power settings".

The "Power & Sleep" screen will open, so left click on "Additional power settings" on the right..

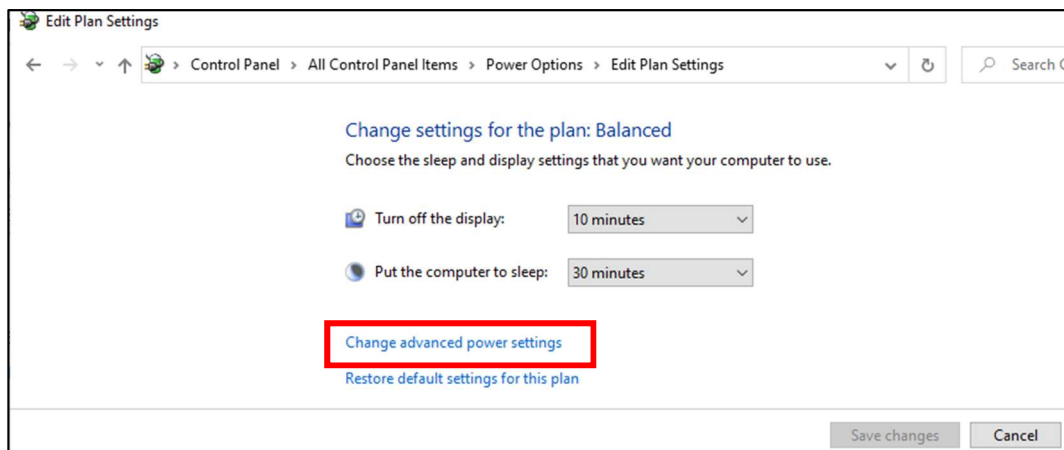


(3) Left click "Change plan settings".

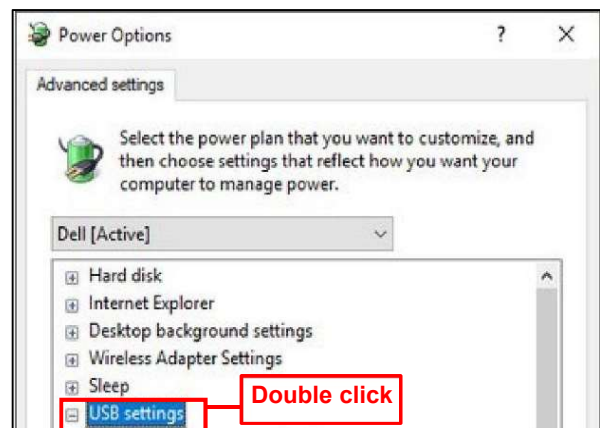
The Power Options will open, so verify which power plan is currently selected, and left click on "Change plan settings" for the currently selected plan.



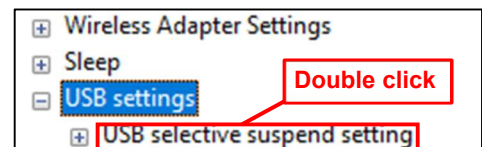
- (4) Left click on "Changed advanced power settings".



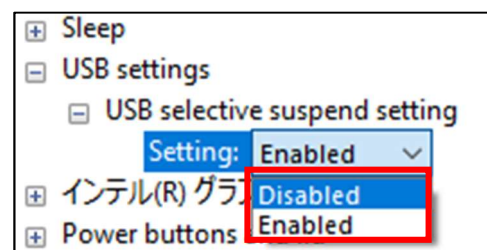
- (5) Double click "USB settings".



- (6) Double click "USB selective suspend setting".  
"USB selective suspend setting" will be displayed  
so double click "USB selective suspend setting".

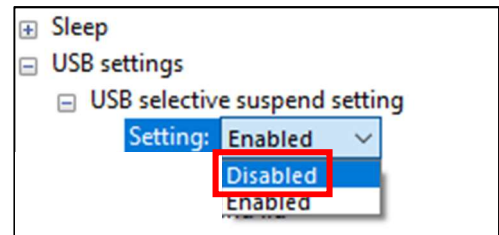


- (7) The current setting value of "Enabled" or  
"Disabled" will be displayed.  
The current setting value of "Enabled" or  
"Disabled" will be displayed, so click on "Enabled"  
to change the setting if necessary.



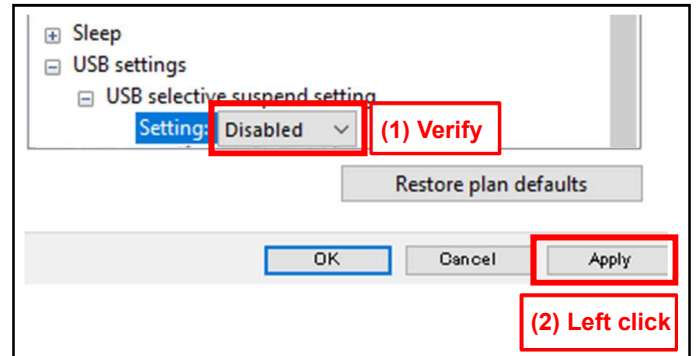
(8) Set to "Disabled".

The "Enabled" and "Disabled" pulldown menu will be displayed, so left click on "Disabled". If set to "Disabled", the power to the USB ports will not be interrupted after a set amount of time.




(9) Apply the setting changes.

Verify that the "USB selective suspend setting" is set to "Disabled", then left click on the "Apply" button.



(10) Close the Settings screens.

After changing the settings, close all the settings screens.

 **Note** For notebook PCs, there will be 2 different items displayed, one for "When plugged in" and one for "On battery power", so set both items.