

SGSample operation manual

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SGSample operation manual (Common edition)

1. Machine Type screen

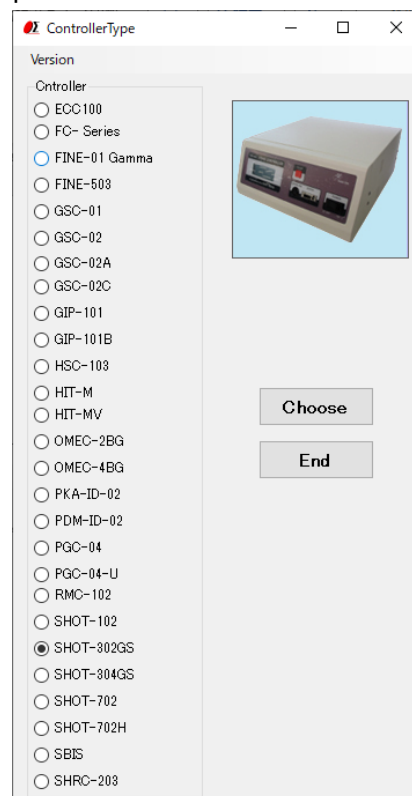
The Machine Type screen is displayed when you run SGSample.

Choose a controller to use, and click a "Choose" button.

SGSample is finished when you click an "End" button.

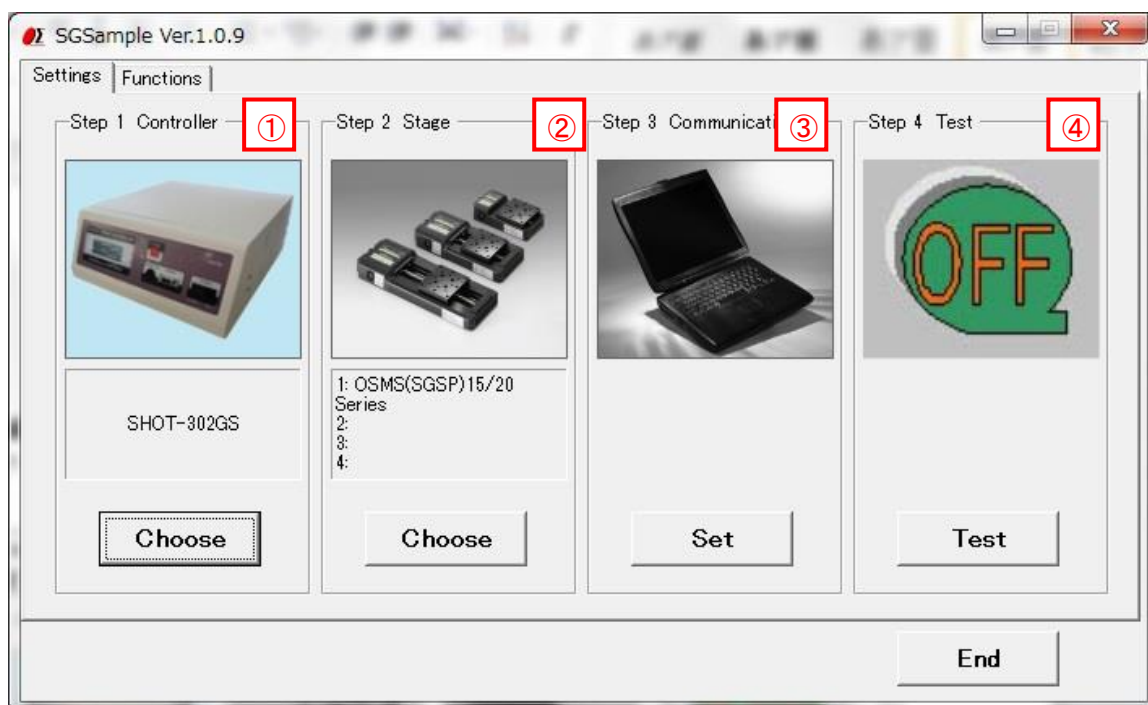
※If change the IP address of HIT-M/HIT-MV,

Start the SGSample as Administrator.



2. Settings screen

Set the parameters from step 1 to step 4 sequentially.



① Step 1 Controller choice

The controller which you chose with the Machine Type screen is displayed.
When you change a controller, click a "Choose" button.

② Step 2 Stage choice

Click a "Choose" button, and then a stage choice screen is displayed. Choose a stage to use with the screen. (In the case of the controller which does not need the stage choice, the "Choose" button is non-indication.)

(1) Stage choice screen

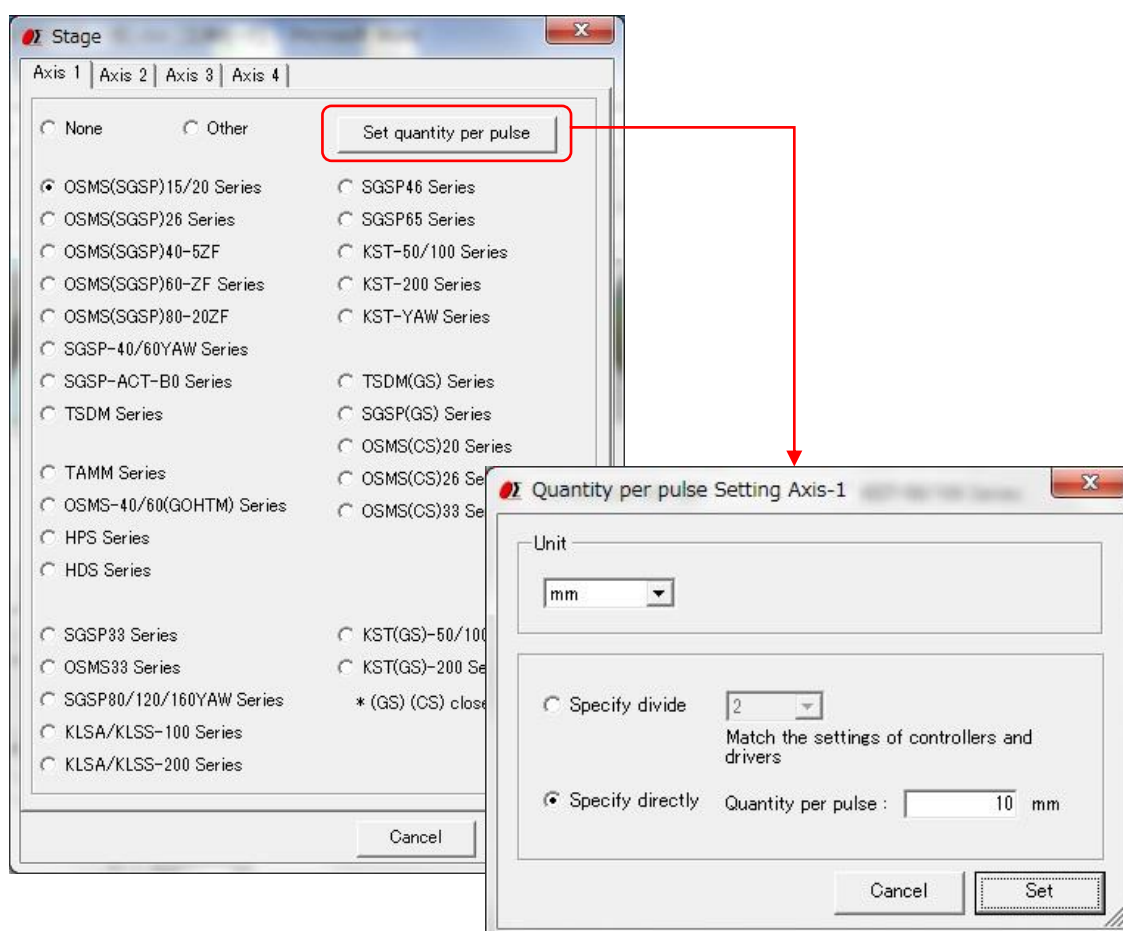
Choose a stage to use.

When a stage is not connected, choose "None".

The stage which is not displayed by a list, choose "Other".

You can choose a pulse or mm or a degree at the indication unit of stage control screen.

Perform the choice of the unit and the necessary setting with a "Quantity per pulse setting" screen. The screen is displayed by clicking a "Set quantity per pulse" button.



(2) Quantity per pulse setting screen

•Unit

Choose the unit of coordinate of the stage control screen. (pulse / mm / degree)

When you choose mm or a degree, perform the following “Specify divide” or “Specify directly”.

•Specify divide

To the setting of a controller or the driver, specify number of divide.

•Specify directly

Input quantity of movement per 1 pulse directly.

To the setting of a stage and a controller or a driver to use, input quantity of movement per 1 pulse.

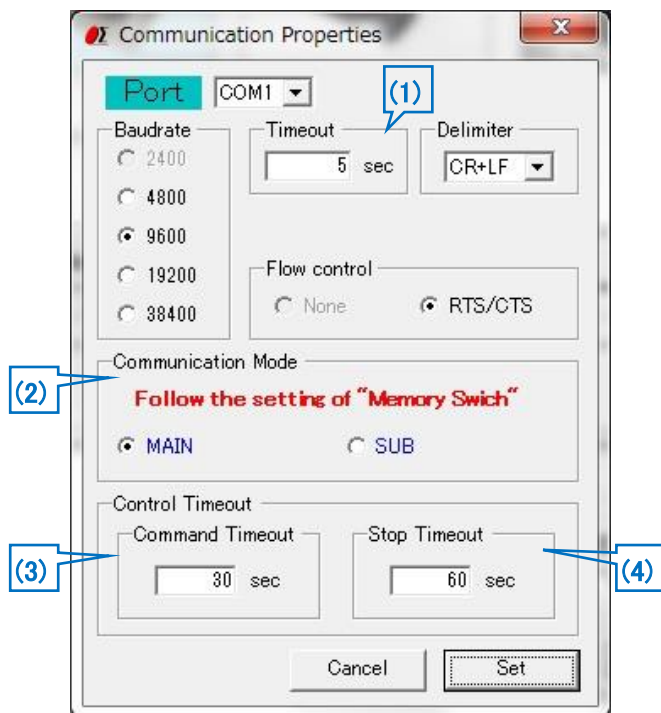
※When you choose a stage with a stage choice screen, specify either “Specify divide” or “Specify directly”. When you choose "Others", input quantity of movement per 1 pulse by “Specify directly”.

③ Step 3 Communication setting

Click a "Set" button, and then a communication properties screen is displayed.

Set the RS232C communication with the screen.

The setting content is different by a controller partly.



(1) Timeout

Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

(2) Communication Mode

- SHOT-302GS/304GS/702, FINE-01/503

Choose MAIN or SUB according to the memory switch COMM/ACK of the controller.

- SHOT-102

Choose SHOT-102 Mode or MINI-5P Mode according to the Dip Switches of the controller.
を選択します。

(3) Command Timeout

Specify maximum allowable time from sending a command to a stage to receiving the response. If no response is returned within the specified time, an error occurs.

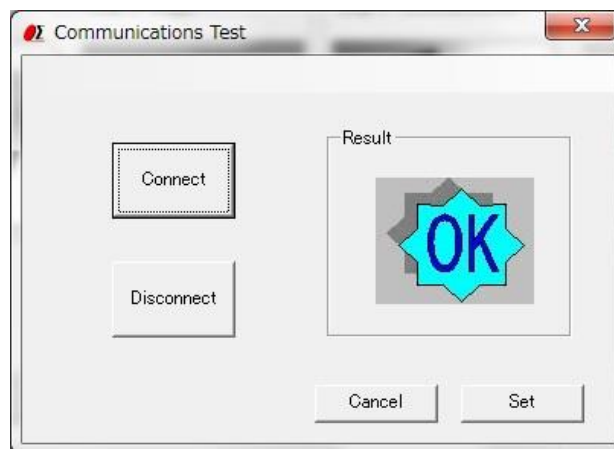
(4) Stop Timeout

Specify maximum allowable time for a stage to stop completely (or, became ready). If a stage fails to stop within this time, an error occurs.

④ Step 4 Communication Test

Click a "Test" button, and then a communication Test screen is displayed.

Test a communication with the screen.



Click the "Connect" button, then a result will be displayed.

When you terminate the communication, click a "Disconnect" button.

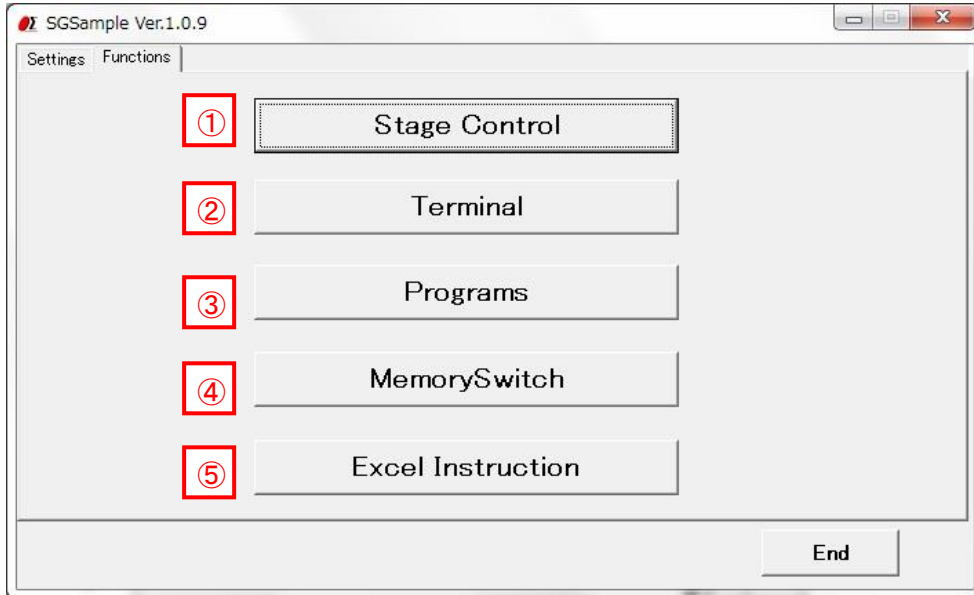
When a connection result is OK, click a "Set" button, then **3. Functions screen** displayed.

When a connection result is NG, please check the interface parameters, the controller setting and cables, then try the communication test again.

3. Functions screen

At the time of connection OK, you can display a functions screen. The function that you can use varies according to a controller.

When you change various settings, click a "Settings" tab and display **2. settings screen**.



① "Stage Control" button

Click a button, and then a stage control screen is displayed.

The stages can be operated by clicking the buttons in the stage control screen.

② "Terminal" button

Click a button, and then a terminal screen is displayed.

The controller will be controlled by commands on the terminal screen.

③ "Program" button

Click a button, and then a program screen is displayed.

You can upload, edit, download, and run a program which is memorized in the controller inside.

(Only for SHOT-302GS/304GS, FINE503/01gamma)

④ "Memory Switch" button

Click a button, and then a Memory switch screen is displayed.

You can upload, edit, and download a memory switch which is memorized in the controller inside. (Only for SHOT-302GS/304GS, SHOT-702, FINE503/01gamma, PKA-ID-02, GSC-01A/C)

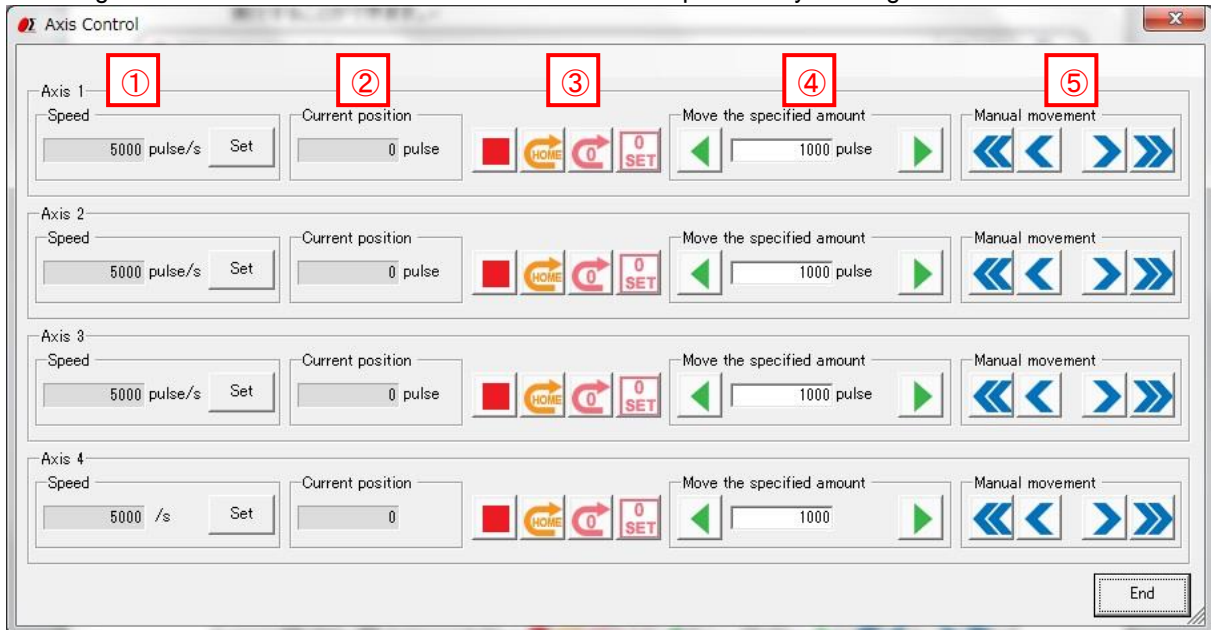
⑤ "Excel Instruction" button

Click a button, and then an Excel instruction screen is displayed.

You describe the instructions contents to a controller for Excel book. The instructions are read and can be executed in the Excel instruction screen.

4. Stage Control screen

The stages which are connected to the controller can be operated by clicking the buttons in the screen.



① Speed

Current speed is displayed. When you change speed, click a "Set" button, and display an Axis Speed screen.

(1) Axis Speed screen

Input a speed. You can specify a speed by moving a slide bar to right and left.

(For reference, the maximum speed according to the stage is displayed.)

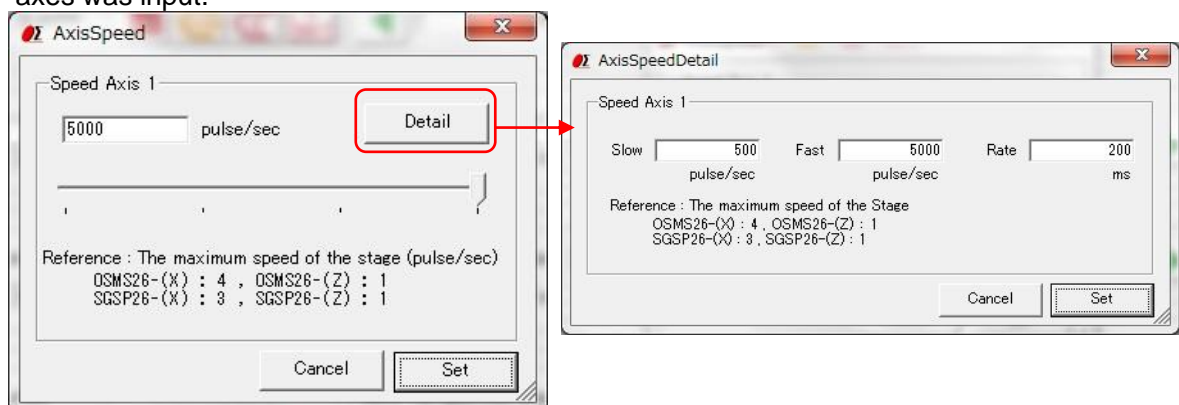
Click a "Set" button to fix the speed setting.

The speed to specify with this screen is maximum speed (Fast). When you specify a minimum speed (Slow) and an acceleration / deceleration time (Rate), click a "Detail" button and display an "Axis Speed Detail" screen.

(2) Axis Speed Detail screen

Input a maximum speed (Fast), minimum speed (Slow) and an acceleration / deceleration time (Rate). Click a "Set" button to fix the speed setting.





※Input speed in GSC-02 so that the speed range of axis-1 and axis-2 is the same. The speed of axis-2 is set at speed same as axis-1 automatically when speed varying in the range of both axes was input.




② Current position

Display the current Position of a stage.

③ Axis operation button





-  Click to stop the stage.
-  Move axis back to the machine origin.
-  Move axis back to the logical origin.
-  Set current position to 0. (Logical origin)

④ Move the specified amount

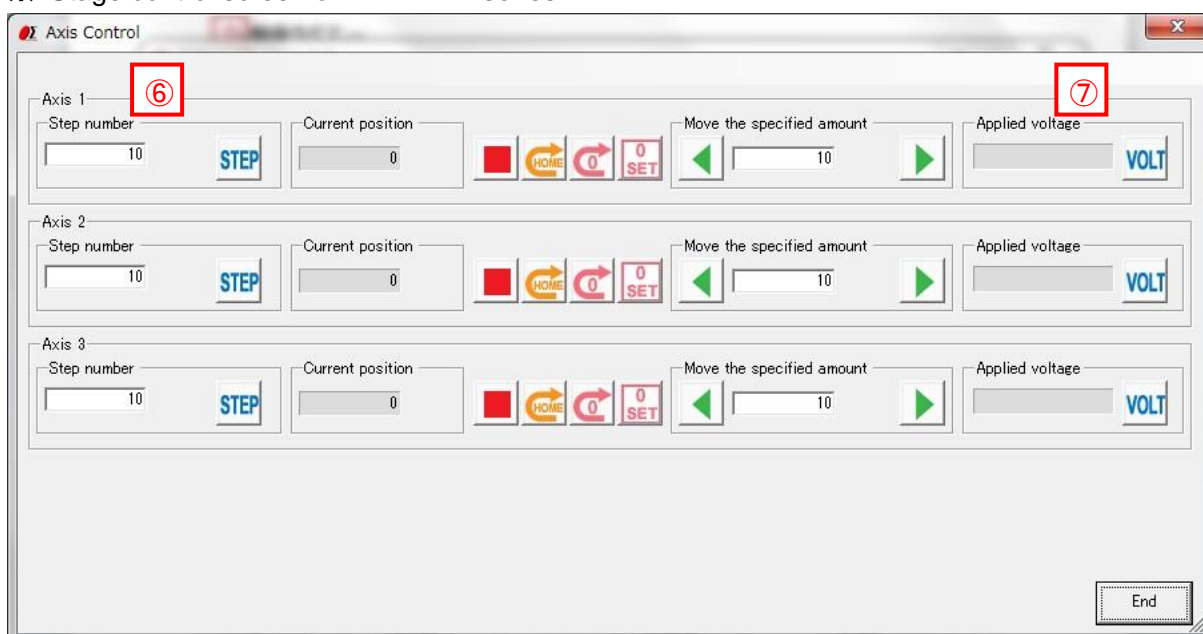
Input quantity of movement and click  button. An axis moves quantity of movement that was input into the negative direction.

Click  button. An axis moves quantity of movement that was input into the positive direction.

⑤ Manual movement

-  While pushing a mouse left button, an axis moves to the negative direction fast. If the button is released, it stops.
-  While pushing a mouse left button, an axis moves to the negative direction slowly. If the button is released, it stops.
-  While pushing a mouse left button, an axis moves to the positive direction fast. If the button is released, it stops.
-  While pushing a mouse left button, an axis moves to the positive direction slowly. If the button is released, it stops.

※ Stage control screen of FINE-XXX series



⑥ Step number

Input the number of the steps and click "STEP" button. The number of the steps is set.

⑦ Applied voltage

Click "VOLT" button. The applied voltage is acquired and displayed.




※ Stage control screen of RMC-102



⑧ Speed

Input the number of the speed(1 - 8) and click "Set" button. The number of the speed is set.

⑨ JOG


Click  or  button. An axis moves until  button is clicked.

※ Stage control screen of GIP-101B



⑩ Position  - 

Click the button to memorize the current position.

⑪ Position  - 

When you click the button, the stage moves to the stored position for that button.

5. Terminal screen

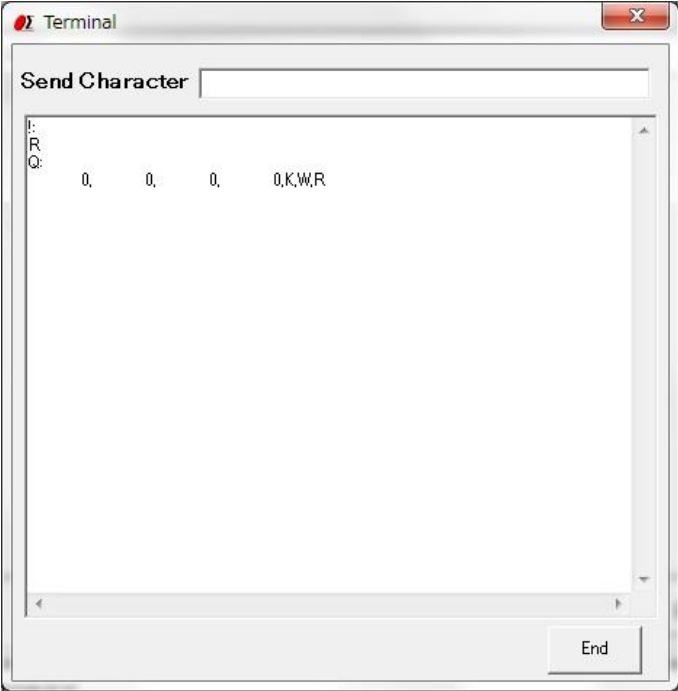
The controller will be controlled by commands on the terminal screen.

Send commands to control the controller and stages.

Or check the current status of stages and I/O interfaces with status checking command (Q:) or I/O checking command (I:) etc.

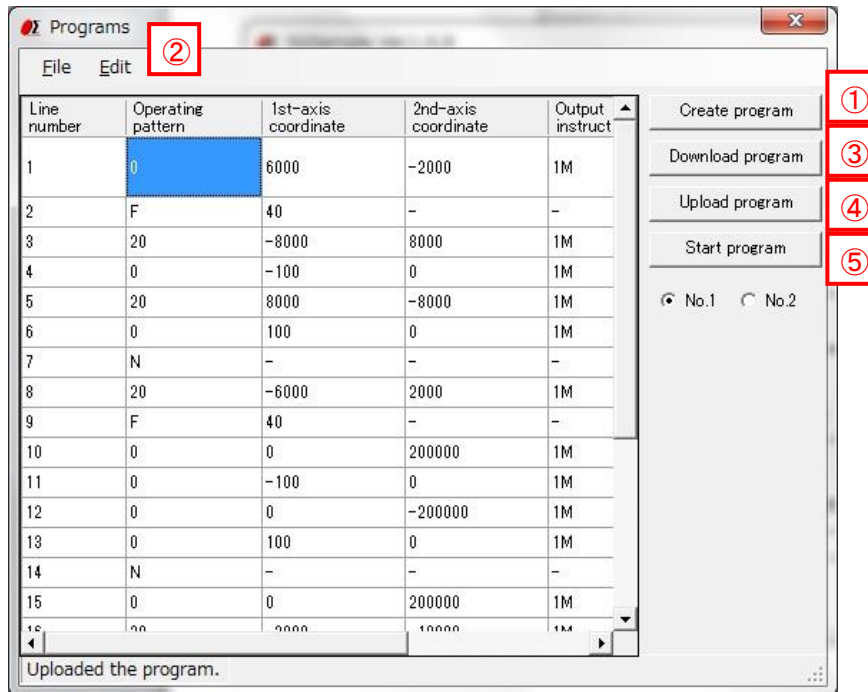
Input the character string into "Send Character" and push Enter key, the command will be sent.

The returned data will be displayed in the text box below.



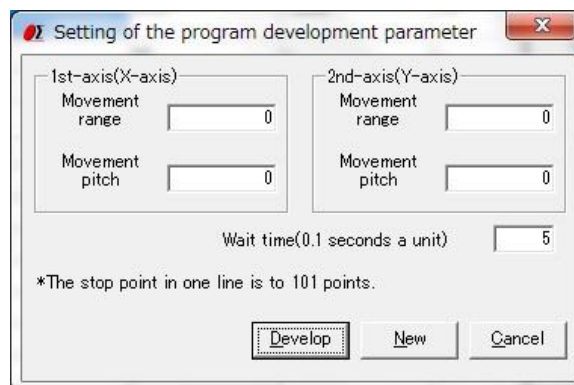
6. Program screen

(Only for SHOT-302GS/304GS, FINE503/01gamma)



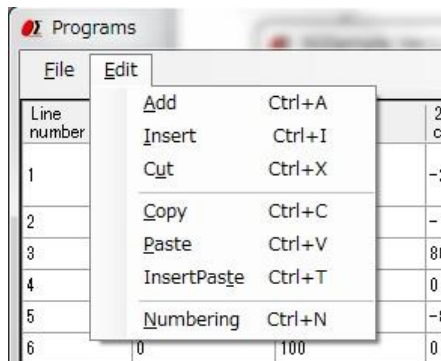
① Create program

- When composing a new program, click the “Create program” button, there will be a programming screen.
- When clicking “New” button, there is a blank screen with blank cells. Please fill in the data into them.
- Click the “Develop” button after inputting movement range and pitch, a program will be created automatically.
- You can download or upload the program from or to controller, and drive stages by the program.



② Edit program

- The program can be edited, such as insert/copy/add/cut etc. with “Edit” of dropdown menu.
- ※Please reset the line numbers after line edit.
- Please move the cursor to rewrite (overwrite) the data.



③ Download program

- The program in the screen can be sent (downloaded) to the controller.
A message “Downloading the program is completed.” will be displayed on the screen, if the download finished normally.
- The controller can store two programs. (No.1/No.2)
Please choose the No.1 or No.2, when you download a program.

④ Upload program

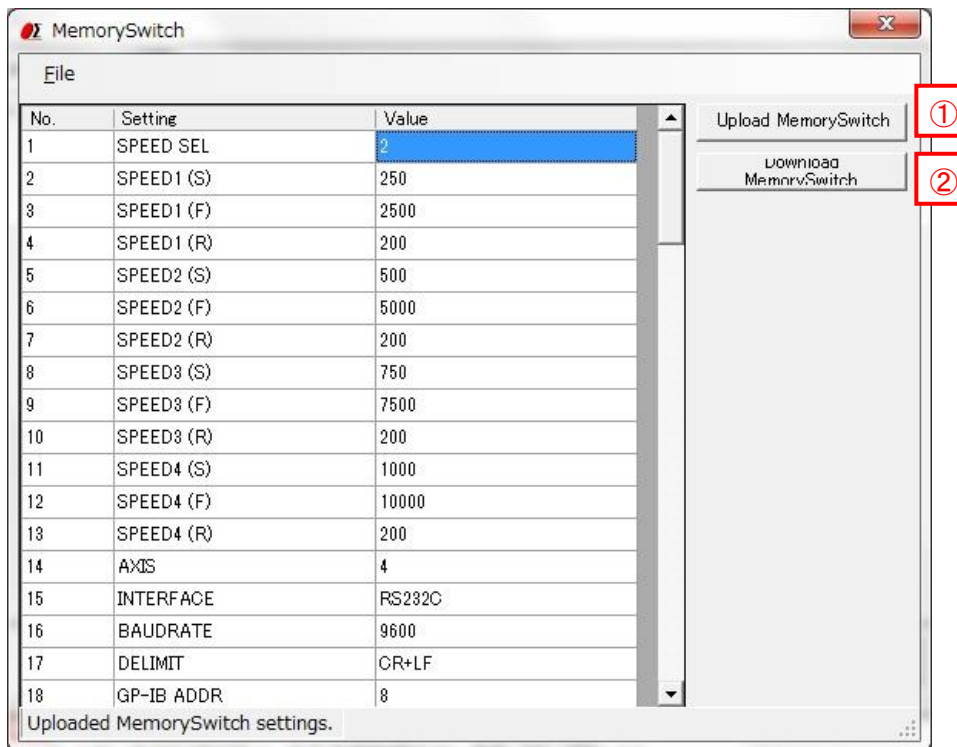
- Read (upload) a program from the controller.
A message “Uploading the program is completed.” will be displayed on the screen when the upload finished normally and program data is displayed.
- The controller can store two programs. (No.1/No.2).
Please choose the No.1 or No.2, when you upload a program.
- The uploaded program can be saved as a CSV file.
And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

⑤ Start program

- Execute the program which is stored in the controller and drive motorized stages or I/O interfaces.
- The controller can store two programs. (No.1/No.2).
Please choose the No1 or No 2, when you execute a program.

7. Memory switch screen

(Only for SHOT-302GS/304GS, SHOT-702, FINE503/01gamma,PKA-ID-02, GIP-101B)



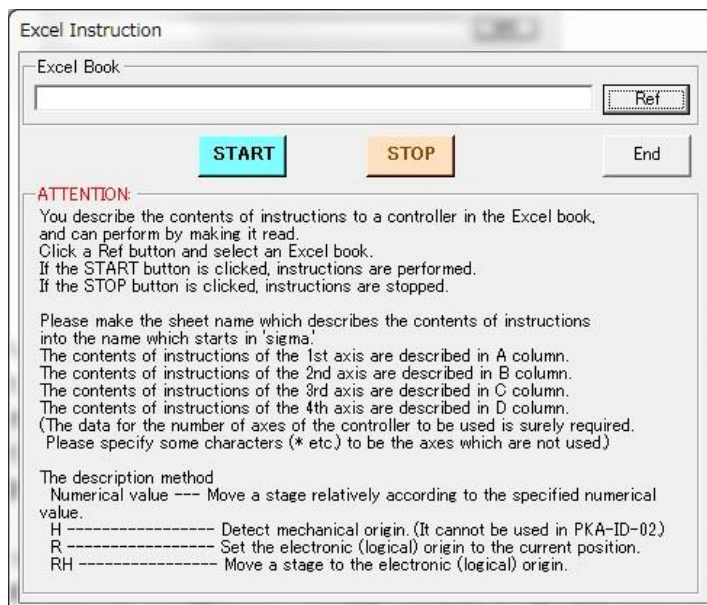
① Upload Memory Switch

- Read (upload) the contents of the memory switch from the controller.
A message of “Uploading the Memory Switch is completed.” will be displayed, if the upload finished normally. And the contents of memory switch will be showed on the screen.
- The uploaded contents of the memory switch can be saved as a CSV file. And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

② Download Memory Switch

- The contents of memory switch in the screen can be sent (downloaded) to the controller.
A message “Downloading the Memory Switch is completed.” will be displayed, if the download finished normally.

8. Excel Instruction screen



• Describe the instructions to a controller for Excel book. You can read and execute them.

Click the “Ref” button to choose an Excel book.

Click the “START” button to run it.

Click the “STOP” button to stop it.

• Please name the sheet starting with "sigma".

• Please input the instructions into A column for axis 1, B column for axis 2, C column for axis 3 and D column for axis 4.

(It is necessary to fill in the columns as many as the axis numbers of the controller. But you can fill some characters into the columns which are not used freely, such as * etc.)

• Description method :

Number ... The relative movements of the stage

*When you choose mm or a degree to the unit of stage, please appoint numerical value with a multiple of quantity per pulse.

H Move to mechanical origin. (PKA-ID-02 cannot use this instruction)

R Set the current position as a logical origin.

RH Move to logical origin.

• Example :

	A	B	C	D	E	
1	1000	2000 *		*		
2	1000	2000 *		*		
3	3000	4000 *		*		
4	3000	4000 *		*		
5						
6						
7						
8						

※This works only for the listed motorized stage controllers.

SGSample operation manual (HIT-M edition)

1. Machine Type screen

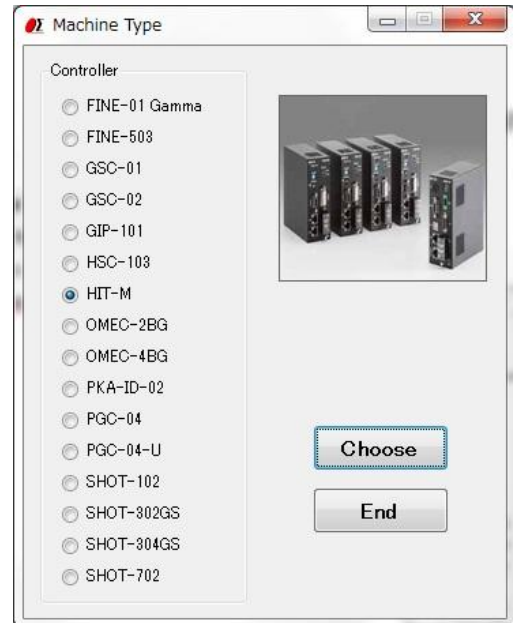
The Machine Type screen is displayed when you run SGSample.

Choose a controller to use, and click a "Choose" button.

SGSample is finished when you click an "End" button.

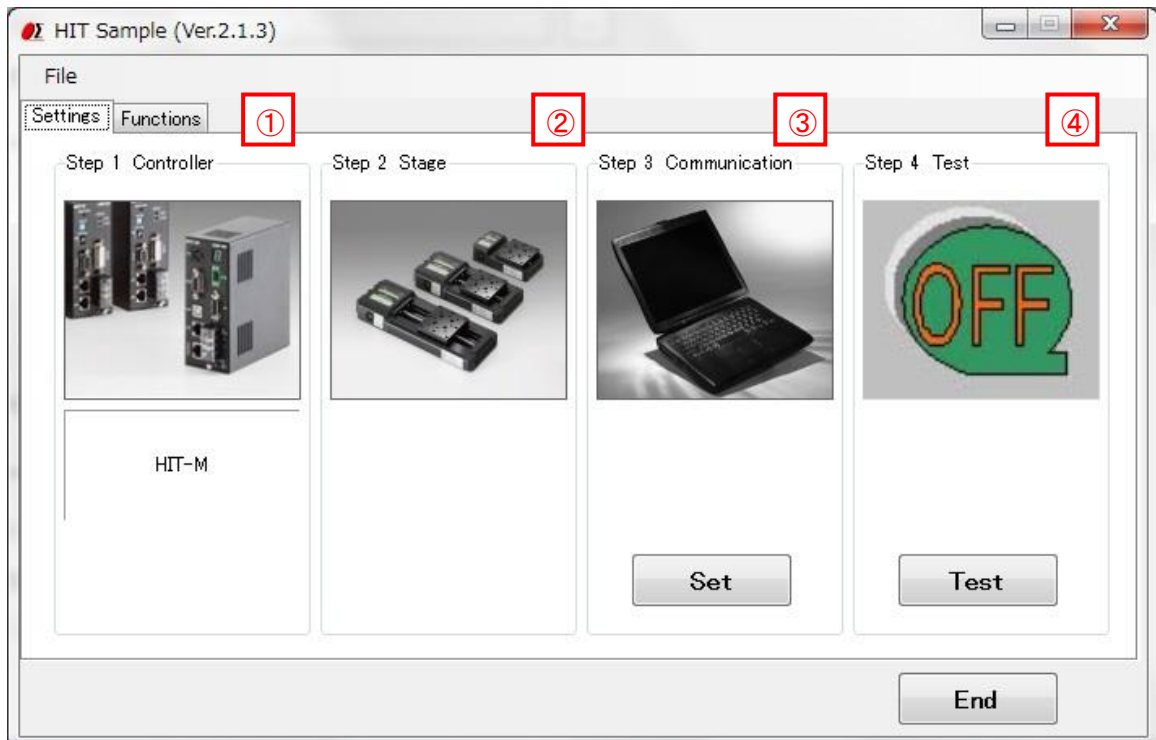
※If change the IP address of HIT-M/HIT-MV,

Start the SGSample as Administrator.



2. Settings screen

Set the parameters from step 1 to step 4 sequentially.



① Step 1 Controller choice

The controller which you chose with the Machine Type screen is displayed.
When you change a controller, click a "Choose" button.

② Step 2 Stage choice

HIT-M does not need the stage choice.

③ Step 3 Communication setting

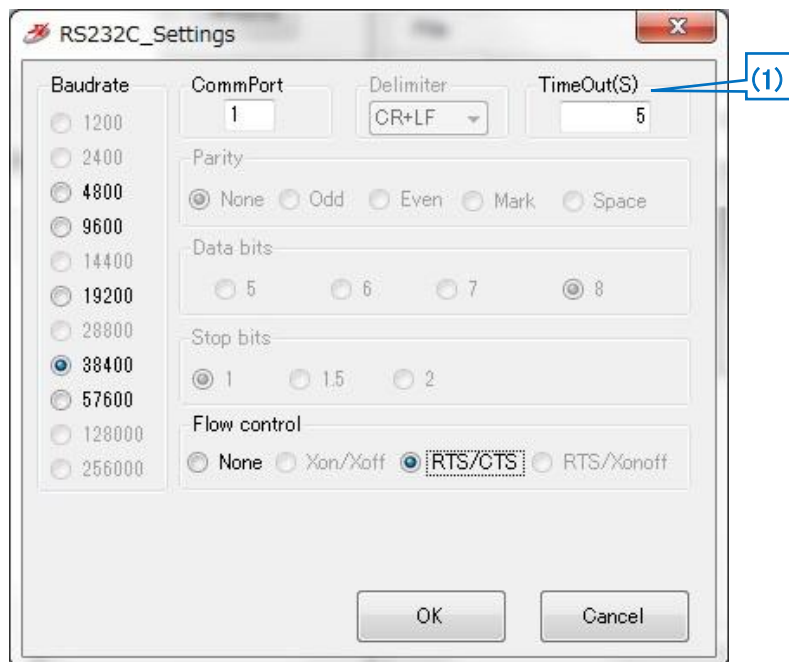
Click a "Set" button, and then a communication interface screen is displayed.

Choose an interface and click a "Settings" button.

Then a communication setting screen depending on an interface is displayed.



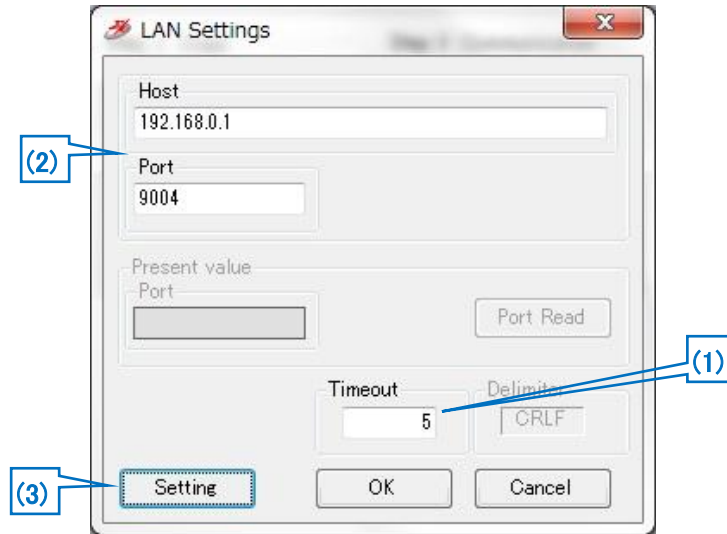
•RS232C settings



(1) Timeout

Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

•LAN settings



(1) Timeout

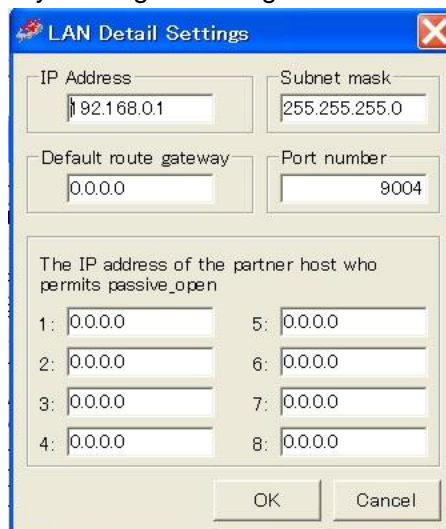
Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

(2) Host, Port

Adjust a host and a port to settings of HIT-M connected at present. Factory default is host (IP address): 192.168.0.1 port: 9004.

(3) Setting

When you change the host (IP address) and port, change them with an LAN detail settings screen. The screen is displayed by clicking a "Setting" button.



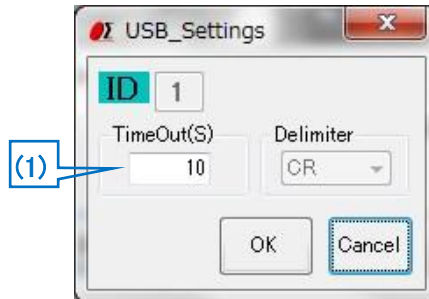
Click "OK" button after setting IP address and others on LAN detail settings screen in accordance with PC condition.

※You set an interface of the memory switch of HIT in "Ethrnet" and make LAN available, and please set the LAN.

※When all the setting from 1 to 8 are "0,0,0,0", the IP address of the partner host who permits passive_open admits the passive_open from all IP addresses. Otherwise, it admits only Passive_Open from the IP except "0,0,0,0" set to 8 from 1.

※Redo PC settings according to new LAN settings when any changes have been made in settings.

•USB settings



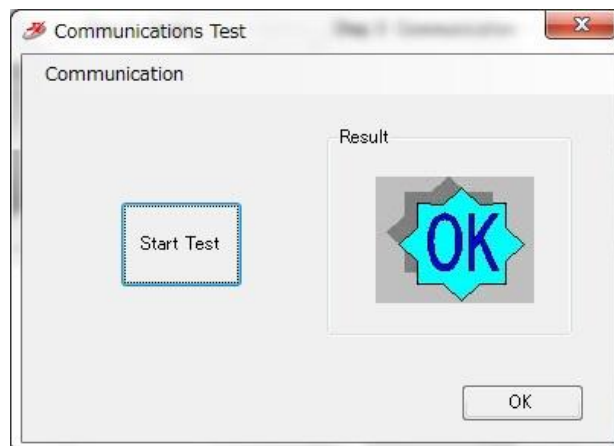
(1) Timeout

Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

④ Step 4 Communication Test

Click a "Test" button, and then a communication Test screen is displayed.

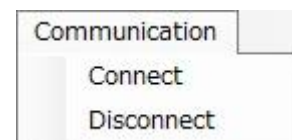
Test a communication with the screen.



Click the "Start Test" button, then a result will be displayed.

When you click "Connect" of the communication menu, the communication is confirmed whether communication is available. Unlike a "Start Test" button, it is not confirmed the transmission and reception of the command.

When you terminate the communication, click a "Disconnect" menu.



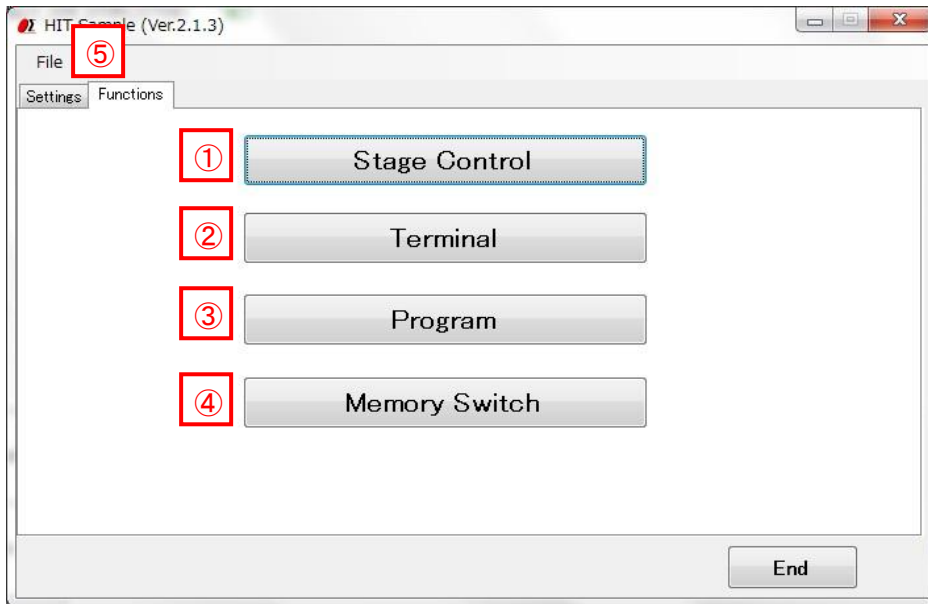
When a connection result is OK, click an "OK" button, then **3. Functions screen** displayed.

When a connection result is NG, please check the interface parameters, the controller setting and cables, and then try the communication test again.

3. Functions screen

At the time of connection OK, you can display a functions screen.

When you change various settings, click a "Settings" tab and display **2. Settings screen**.



① "Stage Control" button

Click a button, and then a stage control screen is displayed.

The stages can be operated by clicking the buttons in the stage control screen.

② "Terminal" button

Click a button, and then a terminal screen is displayed.

The controller will be controlled by commands on the terminal screen.

③ "Program" button

Click a button, and then a program screen is displayed.

You can upload, edit, download, and run a program which is memorized in the controller inside.

④ "Memory Switch" button

Click a button, and then a Memory switch screen is displayed.

You can upload, edit, and download a memory switch which is memorized in the controller inside.

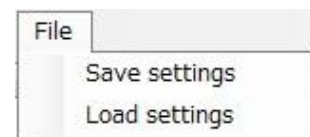
⑤ "File" menu

- Save settings

Save each set condition and contents in the setting file. (extension .sgh)

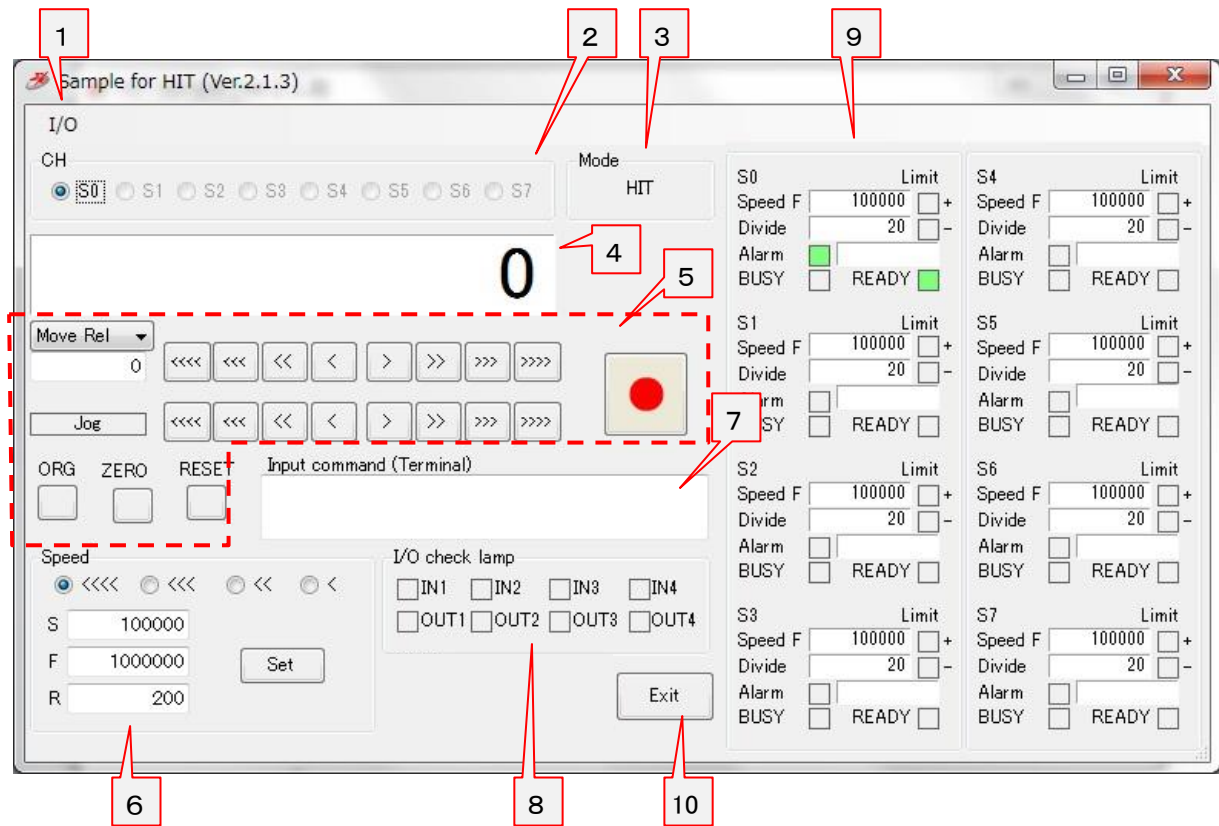
- Load settings

Read the saved setting file, and restore setting contents.



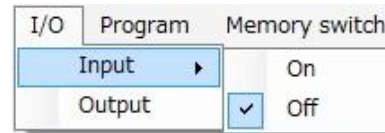
4. Stage Control screen

The stages which are connected to the controller can be operated by clicking the buttons in the screen.



1 "I/O" menu

An "I/O" menu is displayed by clicking it.



• Input

Choose whether to input an I/O signal, or not to input it.

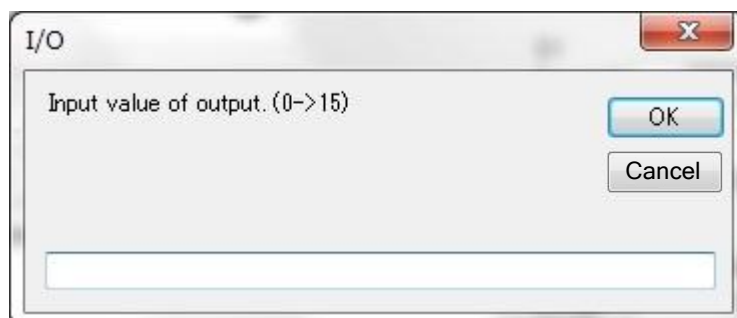
When you choose "Input", an I/O signal is input every about one second from a controller and it is displayed in an I/O check lamp.

※An I/O signal is not input during stage movement.

• Output

When you output an I/O signal, an I/O output screen is displayed by clicking "Output" menu.

Input an output value of 0-15, and click an "OK" button. Then input value is output.



2 CH

Choose an axis for the operation.

SHOT mode : Choose it among S0 - S3.

HIT mode : Choose it among S0 - S7.

3 Mode

The mode of the controller is displayed.

※When you test connection of the communication, and communication was OK'd, the mode of the controller is acquired and is displayed.

4 Current position

Display the current position of an axis for the operation.

5 Axis operation button

Click each button, and operate an axis for the operation.

Choose whether relative movement or absolute movement.

Input quantity to relatively move or movements coordinate.

Relatively move the stage for specified quantity at the speed. Or move to the input position absolutely

While pushing a mouse left button, an axis moves at the speed. If the button is released, it stops.

Stop a stage.

Move the stage to the mechanical origin.

Move the stage to the logical origin.

Set the current position to the logical origin.

The interface shows a 'Move Rel' dropdown menu, a 'Joeg' input field, and a grid of directional buttons (left, right, up, down). Below these are 'ORG', 'ZERO', and 'RESET' buttons. A red circle on the right indicates a stop button.

※The movement speed is set at **6** speed.

6 Speed

Choose a kind of the speed to set, and input a value of the speed.

Click a "Set" button and then the input speed is set.

Input a speed.
S: Minimum speed
F: Maximum speed
R: acceleration / deceleration time

Choose a kind of the speed to set.

Click a "Set" button and then the input speed is set.

The interface shows a 'Speed' window with radio buttons for speed selection, input fields for S (100000), F (1000000), and R (200), and a 'Set' button.

7 Input command (Terminal)

You can input a command directly and can communicate with a controller.

Input the character string (command) to transmit and push Enter key. And then the command will be sent to a controller.

The returned data from the controller will be displayed.

It is the function like the **5. Terminal screen**.

8 I/O check lamp

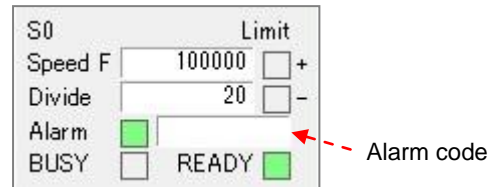
Display the state of the I/O signal.

In the case of OFF, a signal is displayed in ■ (gray). In the case of ON, a signal is displayed in ■ (green).

9 Axis information section

Display information of each axis.

- Speed F Maximum speed
- Divide
- Alarm ■(Green) : Alarm OFF
 ■(Red) : Alarm ON
 ■(Gray) : Slave is unconnected.
 ■(Orange): Stage is unconnected.
- Alarm code Blank: Alarm OFF
 10: Stage is unconnected.
 20: Scale alarm
 40: DRV alarm
- Limit +, - ■(Gray): Limit OFF
 ■(Red) : Limit ON
- BUSY/READY BUSY●(Green) : BUSY
 READY●(Green): READY



10 "Exit" button

Click a button and then close the stage control screen.

5. Terminal screen

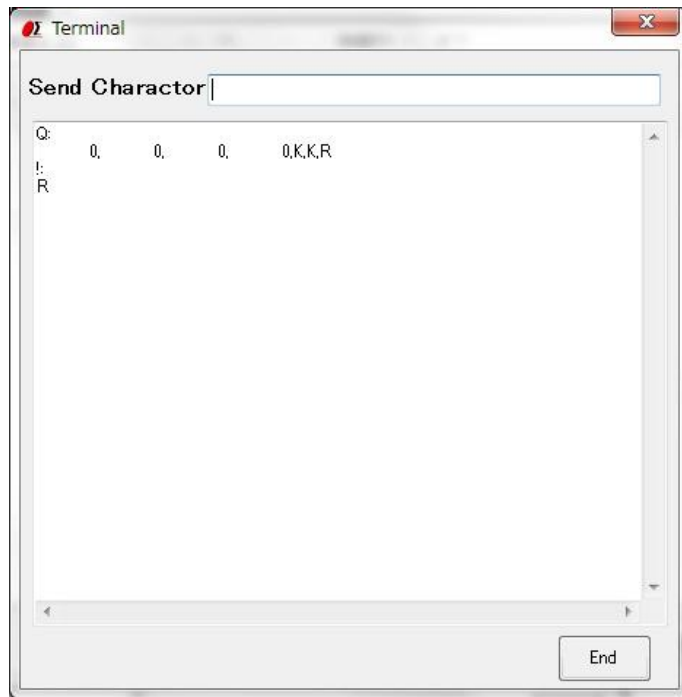
The controller will be controlled by commands on the terminal screen.

Send commands to control the controller and stages.

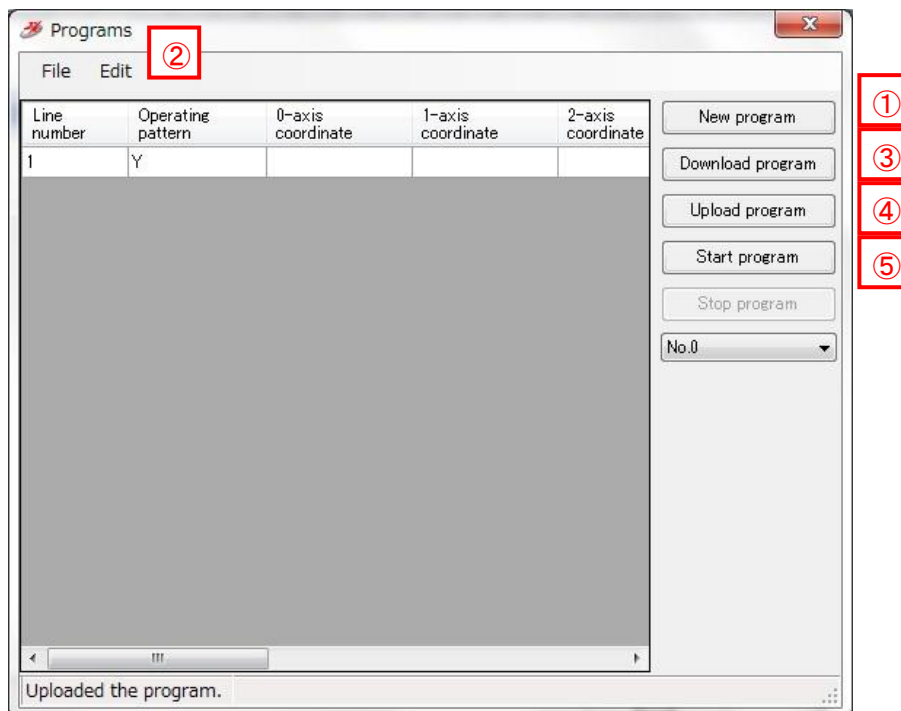
Or check the current status of stages and I/O interfaces with status checking command (Q:) or I/O checking command (I:) etc.

Input the character string into "Send Character" and push Enter key, the command will be sent.

The returned data will be displayed in the text box below.



6. Program screen

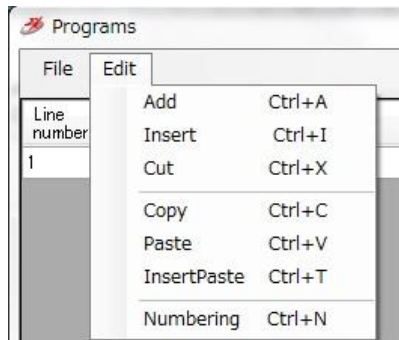


① New program

- When clicking the button, blank lines are displayed.
Input contents according to a program description method.

② Edit program

- The program can be edited, such as insert/copy/add/cut etc. with “Edit” of dropdown menu.
※Please reset the line numbers after line edit.
- Please move the cursor to rewrite (overwrite) the data.



③ Download program

- The program in the screen can be sent (downloaded) to the controller.
A message “Succeeded in downloading the program.” will be displayed on the screen, if the download finished normally.

④ Upload program

- Read (upload) a program from the controller.
A message “Uploaded the program.” will be displayed on the screen when the upload finished normally and program data is displayed.
- The uploaded program can be saved as a CSV file.
And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

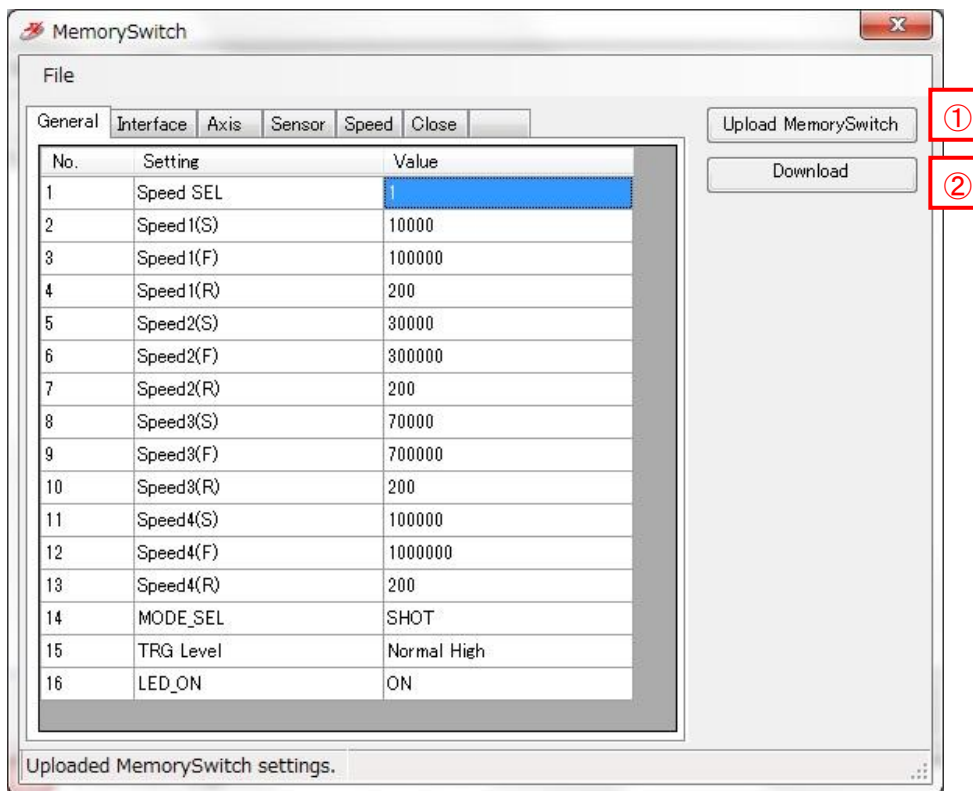
⑤ Start program

- Execute the program which is stored in the controller and drive motorized stages or I/O interfaces.

※The controller can store ten programs. (No.0 - 9).

Please choose the program number, when you download, upload and execute a program.

7. Memory switch screen



① Upload Memory Switch

- Read (upload) the contents of the memory switch from the controller.
A message of “Uploaded Memory Switch settings.” will be displayed, if the upload finished normally. And the contents of memory switch will be showed on the screen.
- The uploaded contents of the memory switch can be saved as a CSV file. And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

② Download Memory Switch

- The contents of memory switch in the screen can be sent (downloaded) to the controller.
A message “Succeeded in downloading Memory Switch.” will be displayed, if the download finished normally.

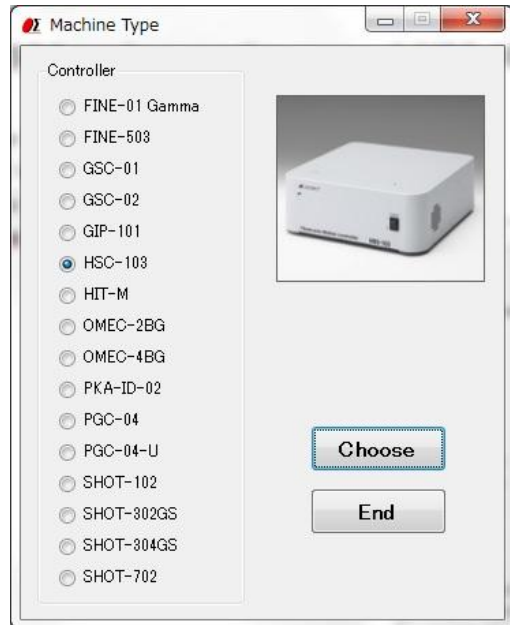
SGSample operation manual (HSC-103 edition)

1. Machine Type screen

The Machine Type screen is displayed when you run SGSample.

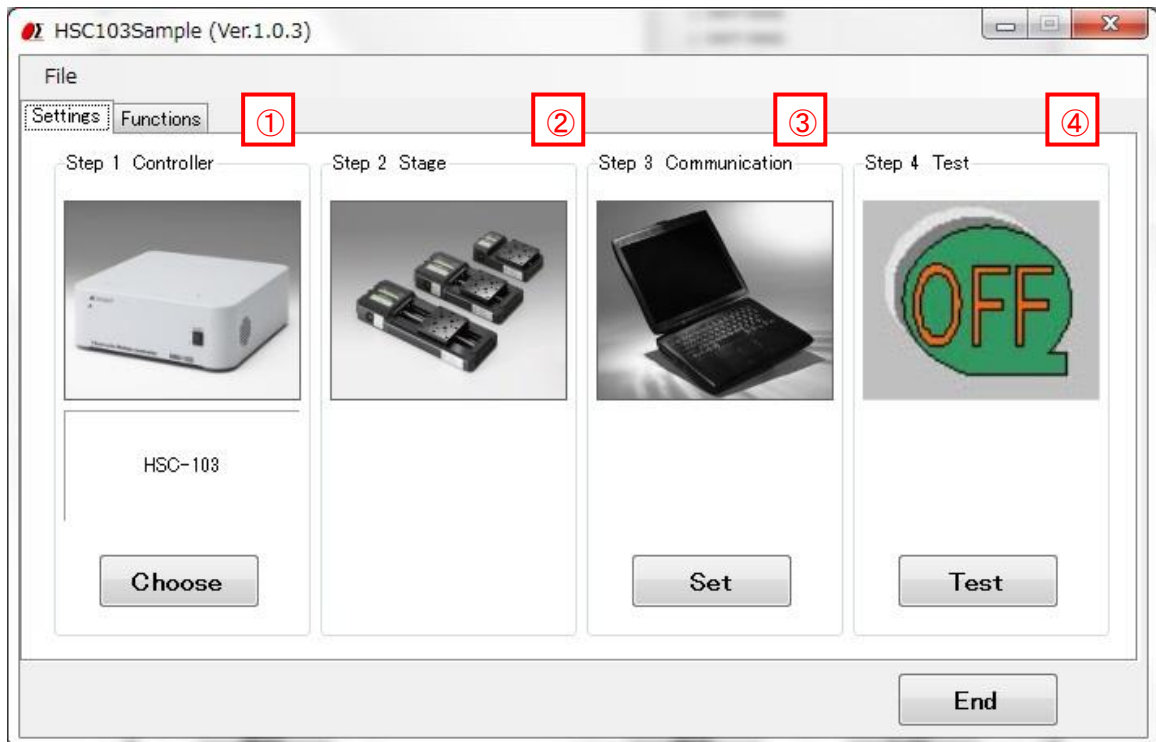
Choose a controller to use, and click a "Choose" button.

SGSample is finished when you click an "End" button.



2. Settings screen

Set the parameters from step 1 to step 4 sequentially.



① Step 1 Controller choice

The controller which you chose with the Machine Type screen is displayed.
When you change a controller, click a "Choose" button.

② Step 2 Stage choice

HSC-103 does not need the stage choice.

③ Step 3 Communication setting

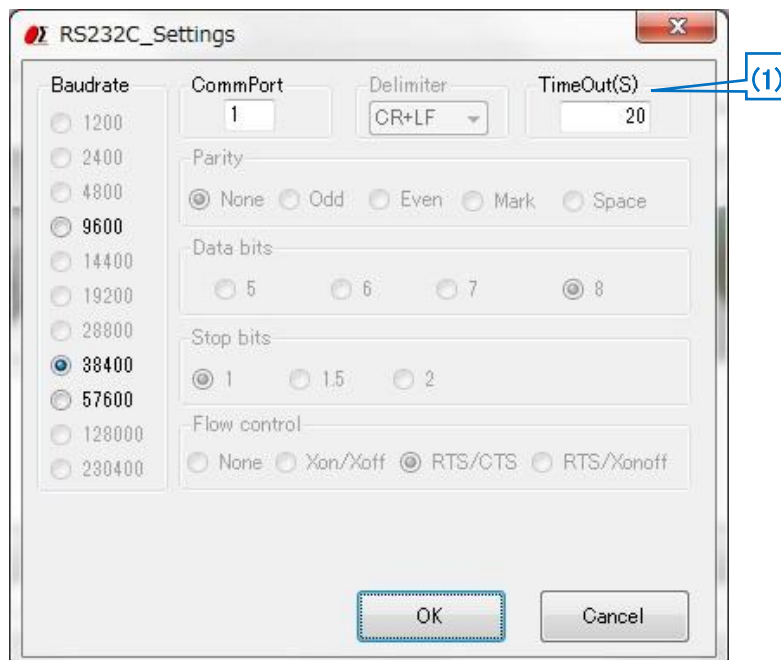
Click a "Set" button, and then a communication interface screen is displayed.

Choose an interface and click a "Settings" button.

Then a communication setting screen depending on an interface is displayed.



• USB(RS232C) settings



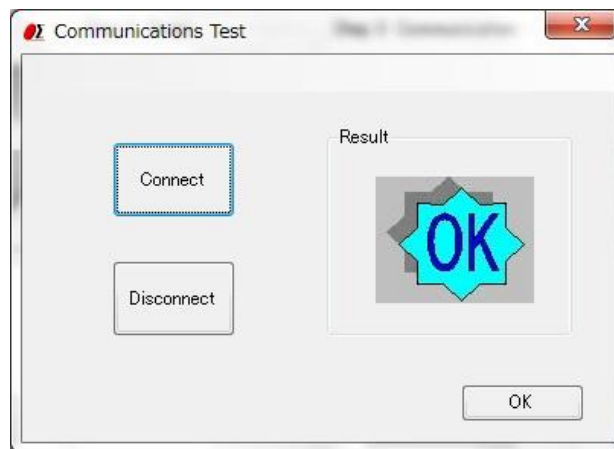
(1) Timeout

Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

④ Step 4 Communication Test

Click a "Test" button, and then a communication Test screen is displayed.

Test a communication with the screen.



Click a "Connect" button, then a result will be displayed.

When you terminate the communication, click a "Disconnect" button.

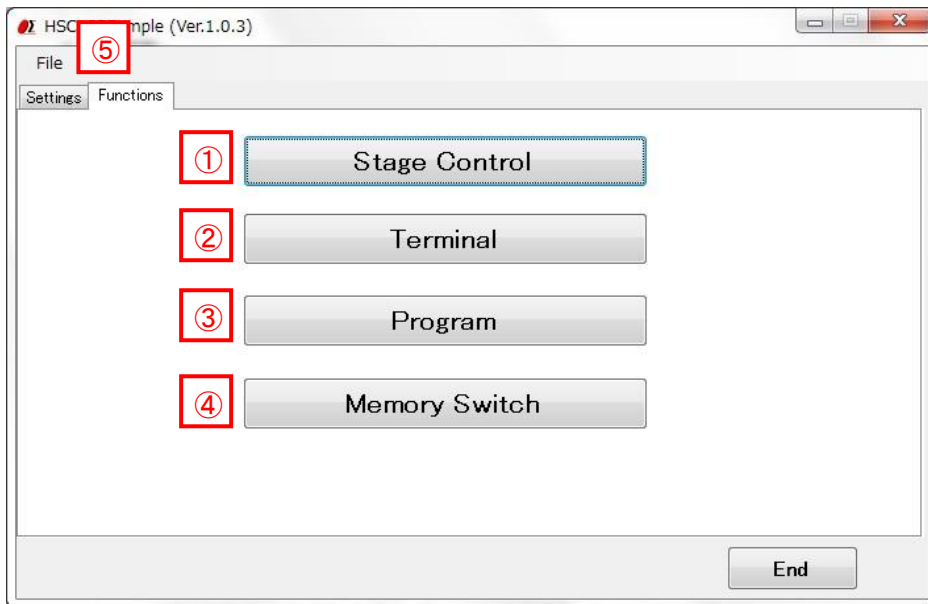
When a connection result is OK, click an "OK" button, then **3. Functions screen** displayed.

When a connection result is NG, please check the interface parameters, the controller setting and cables, and then try the communication test again.

3. Functions screen

At the time of connection OK, you can display a functions screen.

When you change various settings, click a "Settings" tab and display **2. settings screen**.



① "Stage Control" button

Click a button, and then a stage control screen is displayed.

The stages can be operated by clicking the buttons in the stage control screen.

② "Terminal" button

Click a button, and then a terminal screen is displayed.

The controller will be controlled by commands on the terminal screen.

③ "Program" button

Click a button, and then a program screen is displayed.

You can upload, edit, download, and run a program which is memorized in the controller inside.

④ "Memory Switch" button

Click a button, and then a Memory switch screen is displayed.

You can upload, edit, and download a memory switch which is memorized in the controller inside.

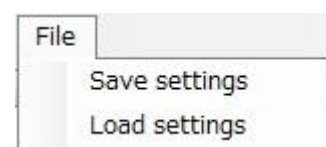
⑤ "File" menu

- Save settings

Save communication setting in a file.

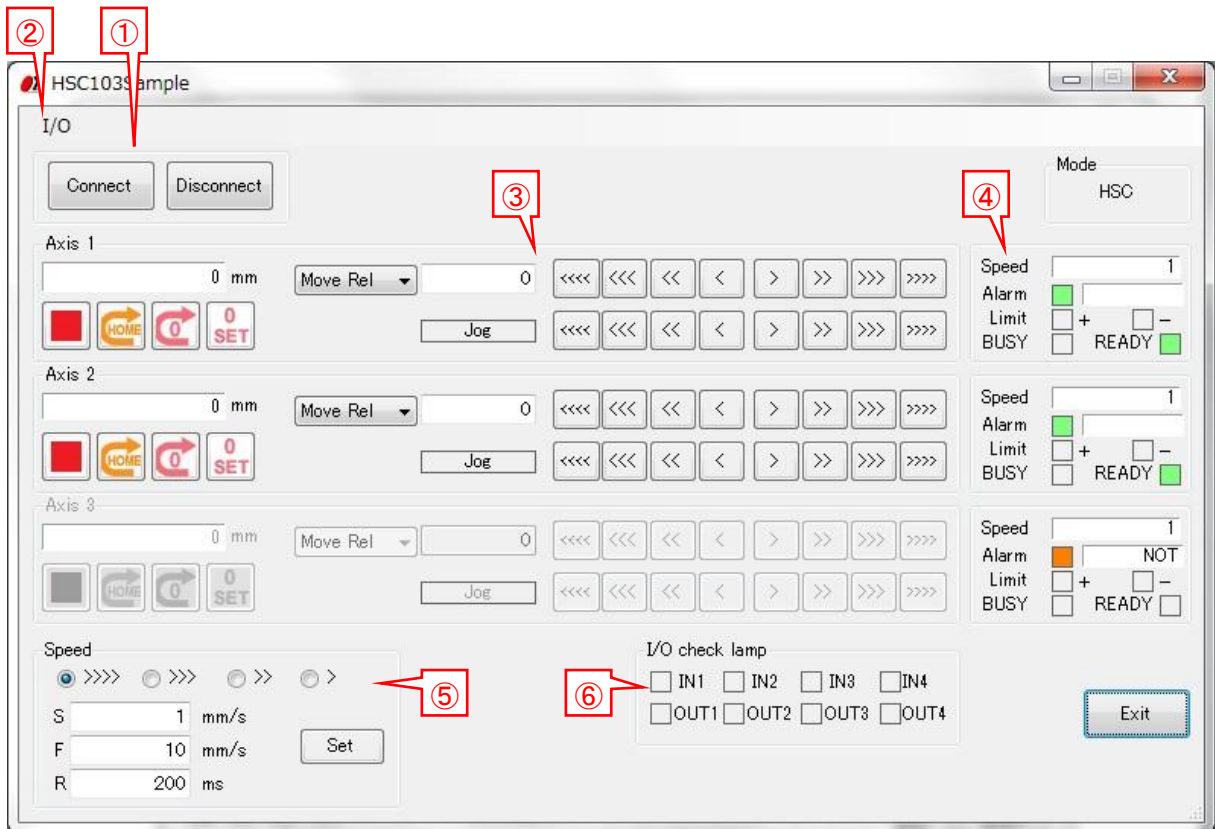
- Load settings

Read the saved setting file, and restore setting contents.



4. Stage Control screen

The stages which are connected to the controller can be operated by clicking the buttons in the screen.



① Connect / Disconnect button

- Connect... Confirm whether communication is available, and connect communication by clicking the button.

Unlike the connection test of the settings tab, it does not confirm the transmission and reception of the command.

- Disconnect... Disconnect the communication by clicking the button.

② "I/O" menu

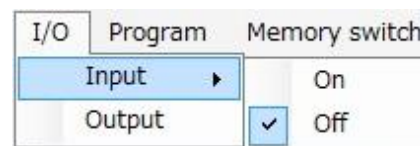
An "I/O" menu is displayed by clicking it.

- Input

Choose whether to input an I/O signal, or not to input it.

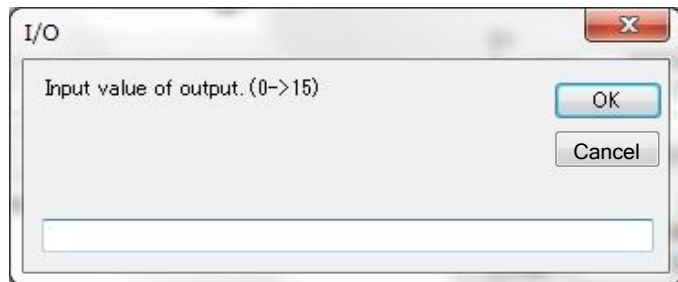
When you choose "Input", an I/O signal is input every about one second from a controller and it is displayed in an I/O check lamp.

※An I/O signal is not input during stage movement.



•Output

When you output an I/O signal, an I/O output screen is displayed by clicking “Output” menu. Input an output value of 0-15, and click an "OK" button. Then input value is output.



③ Axis control button

Click each button, and operate an axis for the operation.

Display current position

Input quantity to relatively move or movements coordinate.

Relatively move the stage for specified quantity at the speed. Or move to the input position absolutely.

Choose whether relative movement or absolute movement.

While pushing a mouse left button, an axis moves at the speed. If the button is released, it stops.

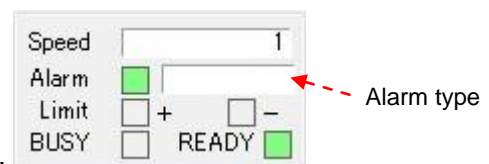
※The movement speed is set at ⑤ speed.

- Stop a stage.
- Move the stage to the mechanical origin.
- Move the stage to the logical origin.
- Set the current position to the logical origin.

④ Axis information section

Display information of each axis.

- Speed F Maximum speed
- Alarm ■(Green) : Alarm OFF
- (Red) : Alarm ON
- (Orange): Stage is unconnected.
- Alarm type Blank : Alarm OFF
- Stage is unconnected, Driver alarm, Retry over alarm
- Limit +, - (Gray) : Limit OFF
- (Red) : Limit ON
- BUSY/READY BUSY ■(Green) : BUSY
- READY ■(Green) : READY



⑤ Speed

Choose a kind of the speed to set, and input a value of the speed.

Click a "Set" button and then the input speed is set.

Input a speed.
S: Minimum speed
F: Maximum speed
R: acceleration /
deceleration time



⑥ I/O check lamp

Display the state of the I/O signal.

In the case of OFF, a signal is displayed in ■ (gray). In the case of ON, a signal is displayed in ■ (green).

5. Terminal screen

The controller will be controlled by commands on the terminal screen.

Send commands to control the controller and stages.

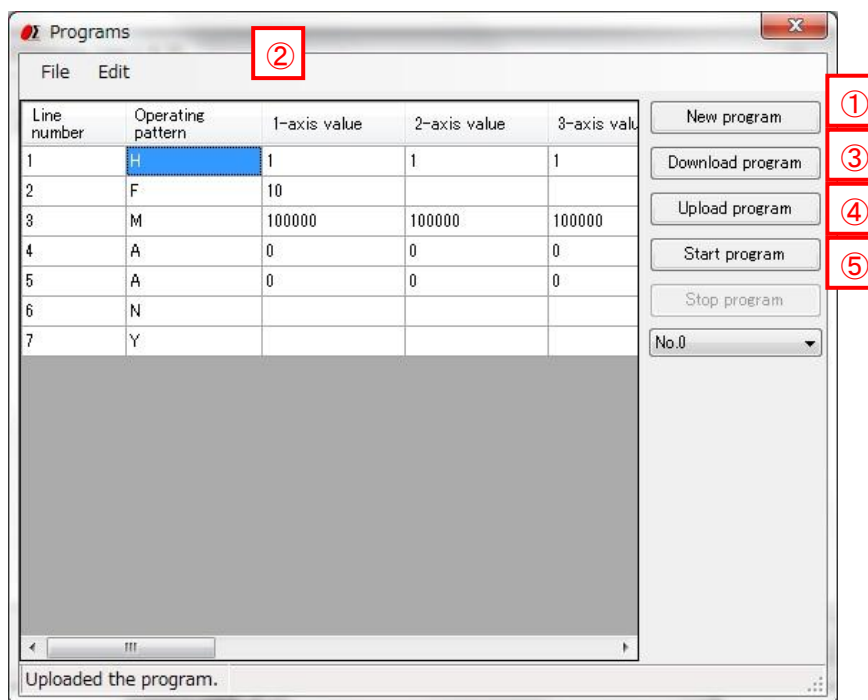
Or check the current status of stages and I/O interfaces with status checking command (Q:) or I/O checking command (I:) etc.

Input the character string into "Send Character" and push Enter key, the command will be sent.

The returned data will be displayed in the text box below.



6. Program screen

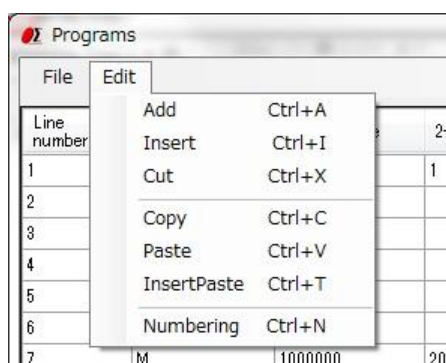


① New program

- When clicking the button, blank lines are displayed.
Input contents according to a program description method.

② Edit program

- The program can be edited, such as insert/copy/add/cut etc. with “Edit” of dropdown menu.
※Please reset the line numbers after line edit.
- Please move the cursor to rewrite (overwrite) the data.



③ Download program

- The program in the screen can be sent (downloaded) to the controller.
A message “Succeeded in downloading the program.” will be displayed on the screen, if the download finished normally.

④ Upload program

- Read (upload) a program from the controller.
A message “Uploaded the program.” will be displayed on the screen when the upload finished normally and program data is displayed.
- The uploaded program can be saved as a CSV file.
And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

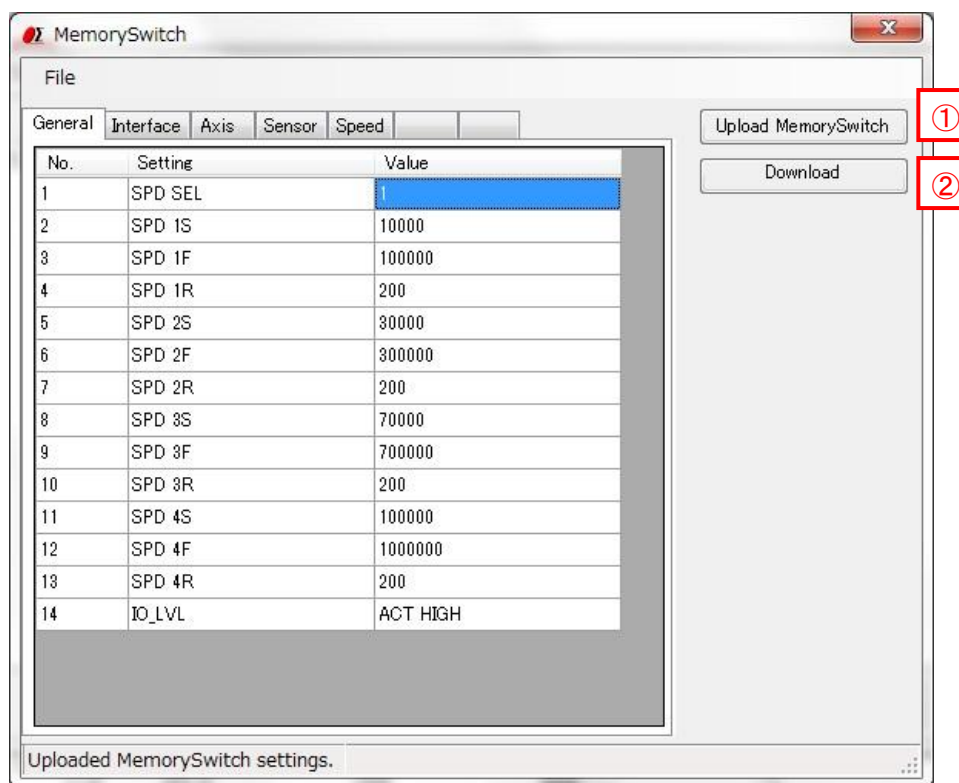
⑤ Start program

- Execute the program which is stored in the controller and drive motorized stages or I/O interfaces.

※The controller can store ten programs. (No.0 - 9).

Please choose the program number, when you download, upload and execute a program.

7. Memory switch screen



① Upload Memory Switch

- Read (upload) the contents of the memory switch from the controller.
A message of “Uploaded Memory Switch settings.” will be displayed, if the upload finished normally. And the contents of memory switch will be displayed on the screen.

- The uploaded contents of the memory switch can be saved as a CSV file. And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

② Download Memory Switch

- The contents of memory switch in the screen can be sent (downloaded) to the controller. A message “Succeeded in downloading Memory Switch.” will be displayed, if the download finished normally.

SGSample operation manual (PGC-04,PGC-04-U edition)

1. Machine Type screen

The Machine Type screen is displayed when you run SGSample.

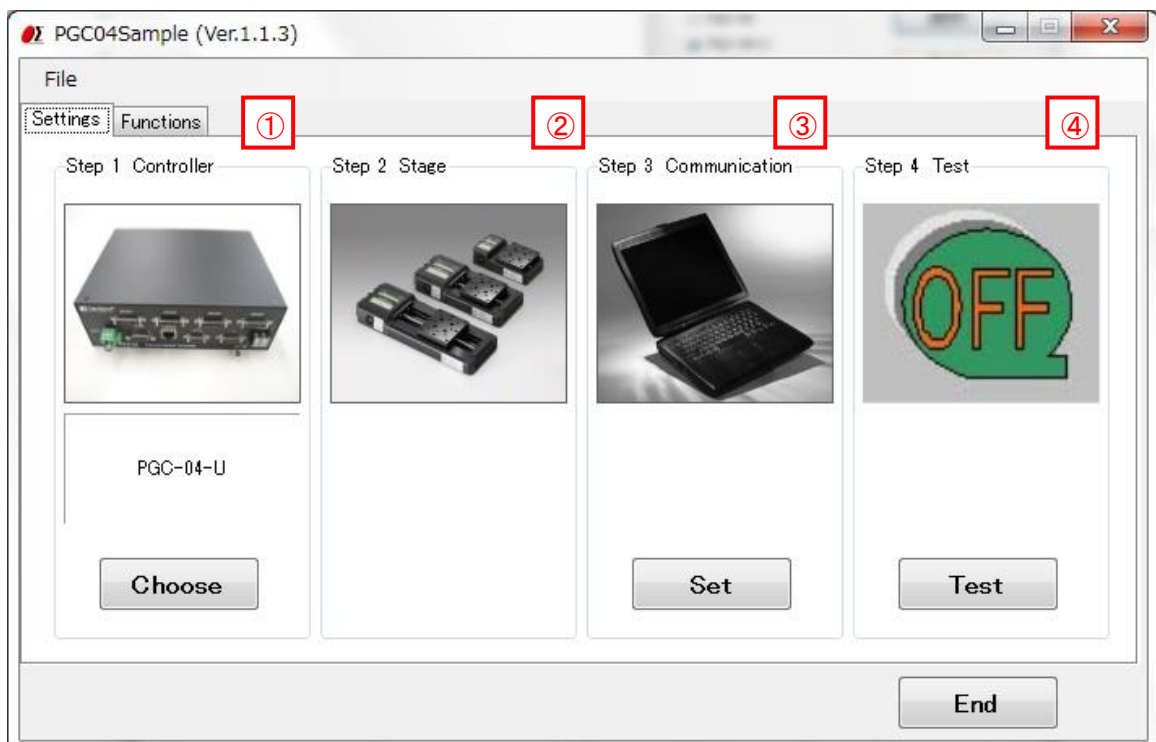
Choose a controller to use, and click a "Choose" button.

SGSample is finished when you click an "End" button.



2. Settings screen

Set the parameters from step 1 to step 4 sequentially.



① Step 1 Controller choice

The controller which you chose with the Machine Type screen is displayed.
When you change a controller, click a "Choose" button.

② Step 2 Stage choice

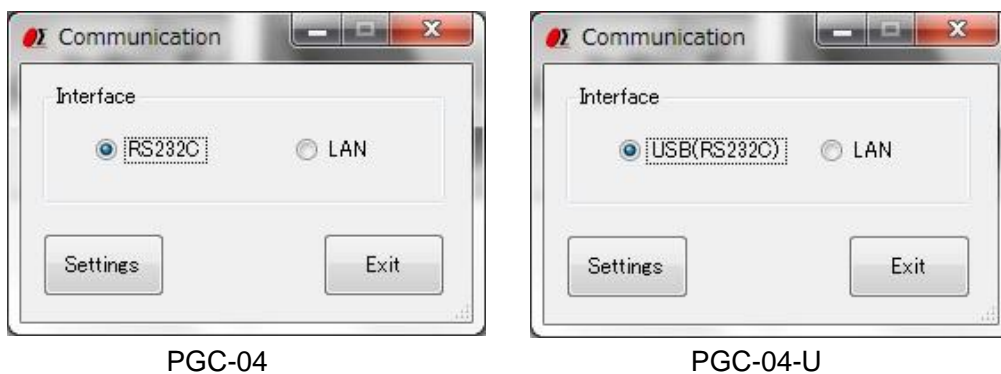
PGC-04 and PGC-04-U do not need the stage choice.

③ Step 3 Communication setting

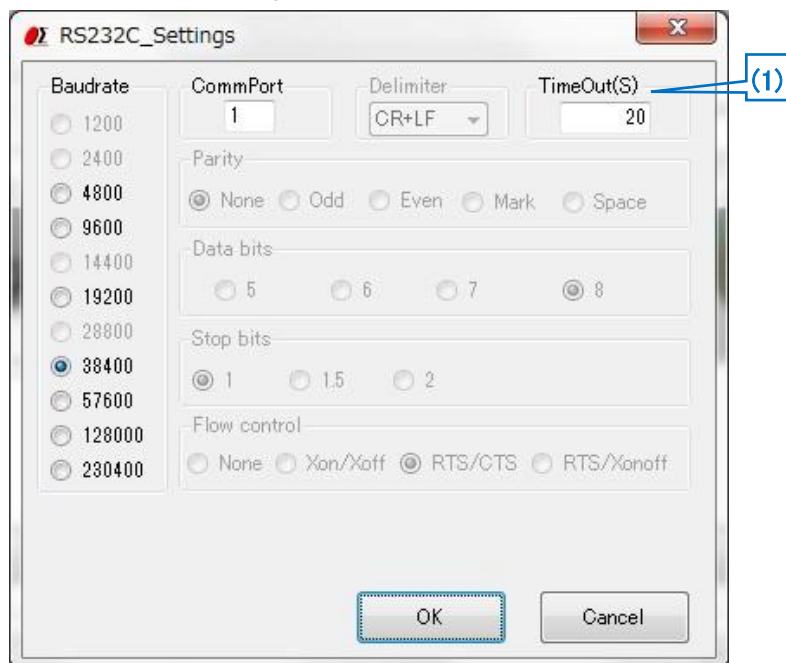
Click a "Set" button, and then a communication interface screen is displayed.

Choose an interface and click a "Settings" button.

Then a communication setting screen depending on an interface is displayed.



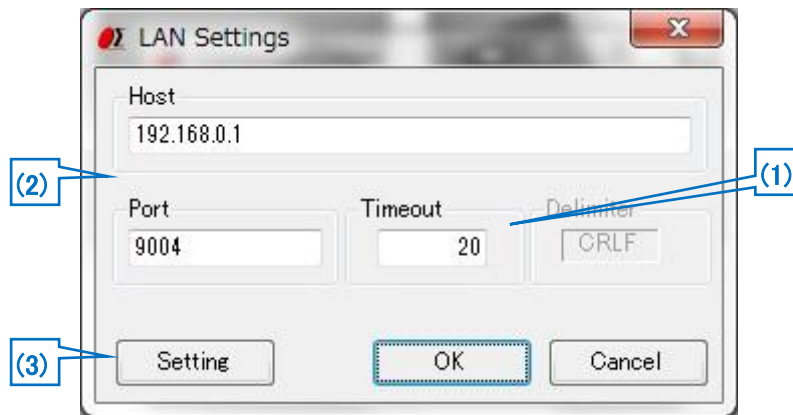
• RS232C and USB(RS232C) settings



(1) Timeout

Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

•LAN settings



(1) Timeout

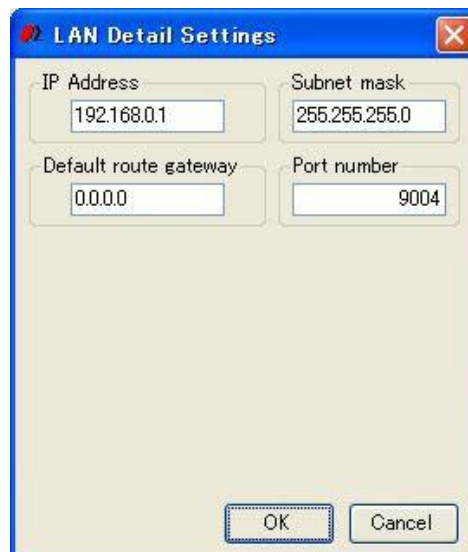
Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

(2) Host, Port

Adjust a host and a port to settings of PGC-04-U connected at present. Factory default is host (IP address): 192.168.0.1 port: 9004.

(3) Setting

When you change the host (IP address) and port, change them with an LAN detail settings screen. The screen is displayed by clicking a "Setting" button.



LAN Detail Settings screen

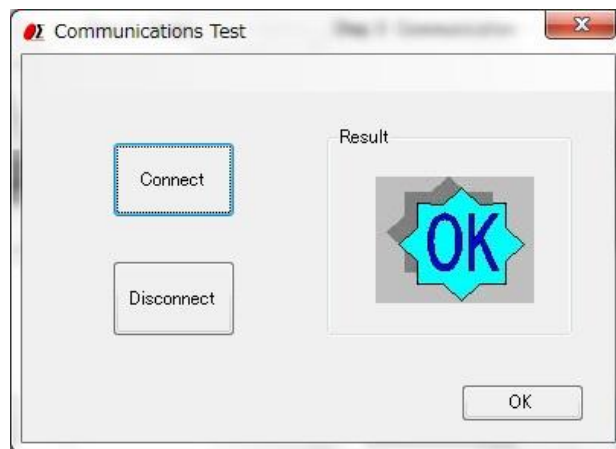
Click "OK" button after setting IP address and others on LAN detail settings screen in accordance with PC condition.

※Redo PC settings according to new LAN settings when any changes have been made in settings.

④ Step 4 Communication Test

Click a "Test" button, and then a communication Test screen is displayed.

Test a communication with the screen.



Click the "Connect" button, then a result will be displayed.

When you terminate the communication, click a "Disconnect" button.

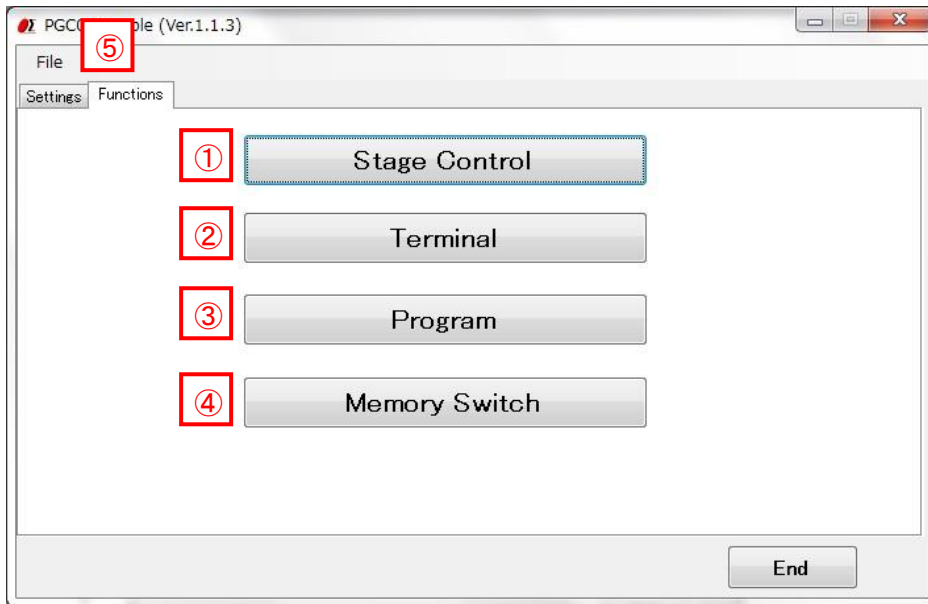
When a connection result is OK, click an "OK" button, then **3. Functions screen** displayed.

When a connection result is NG, please check the interface parameters, the controller setting and cables, and then try the communication test again.

3. Functions screen

At the time of connection OK, you can display a functions screen.

When you change various settings, click a "Settings" tab and display **2. settings screen**.



① "Stage Control" button

Click a button, and then a stage control screen is displayed.

The stages can be operated by clicking the buttons in the stage control screen.

② "Terminal" button

Click a button, and then a terminal screen is displayed.

The controller will be controlled by commands on the terminal screen.

③ "Program" button

Click a button, and then a program screen is displayed.

You can upload, edit, download, and run a program which is memorized in the controller inside.

④ "Memory Switch" button

Click a button, and then a Memory switch screen is displayed.

You can upload, edit, and download a memory switch which is memorized in the controller inside.

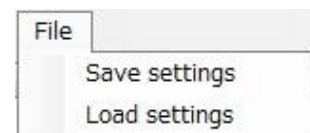
⑤ "File" menu

- Save settings

Save communication setting in a file.

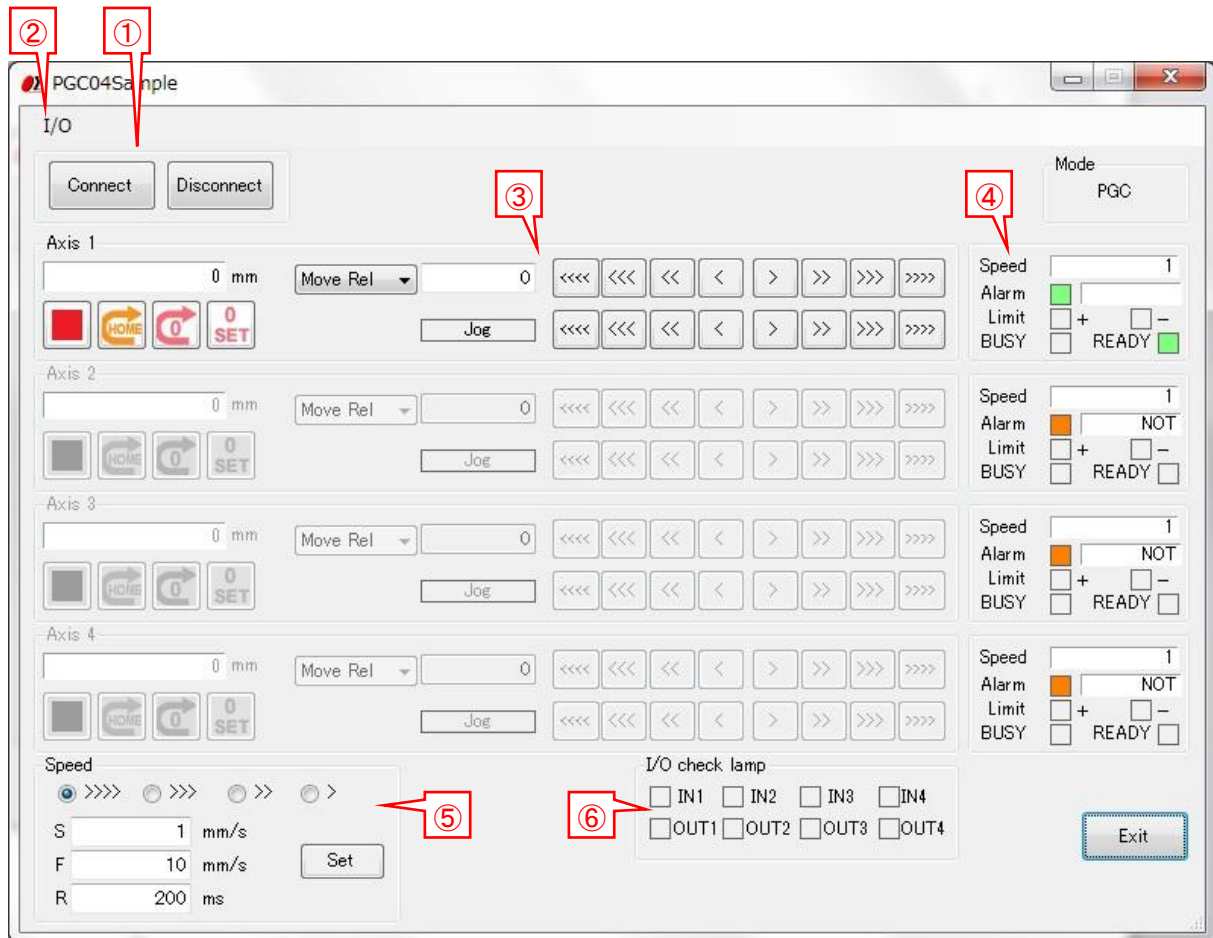
- Load settings

Read the saved setting file, and restore setting contents.



4. Stage Control screen

The stages which are connected to the controller can be operated by clicking the buttons in the screen.



① Connect / Disconnect button

- Connect... Confirm whether communication is available, and connect communication by clicking the button.

Unlike the connection test of the settings tab, it does not confirm the transmission and reception of the command.

- Disconnect... Disconnect the communication by clicking the button.

② "I/O" menu

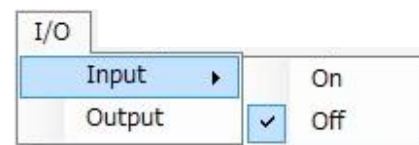
An "I/O" menu is displayed by clicking it.

- Input

Choose whether to input an I/O signal, or not to input it.

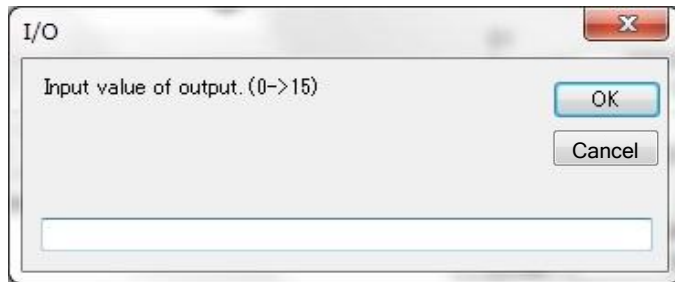
When you choose "Input", an I/O signal is input every about one second from a controller and it is displayed in an I/O check lamp.

※An I/O signal is not input during stage movement.



•Output

When you output an I/O signal, an I/O output screen is displayed by clicking “Output” menu. Input an output value of 0-15, and click an "OK" button. Then input value is output.



③ Axis control button

Click each button, and operate an axis for the operation.

Display current position Input quantity to relatively move or movements coordinate. Relatively move the stage for specified quantity at the speed. Or move to the input position absolutely

Choose whether relative movement or absolute movement. While pushing a mouse left button, an axis moves at the speed. If the button is released, it stops.

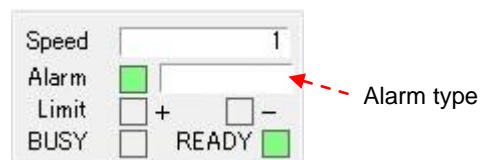
- Stop a stage.
- Move the stage to the mechanical origin.
- Move the stage to the logical origin.
- Set the current position to the logical origin.

※The movement speed is set at ⑤ speed.

④ Axis information section

Display information of each axis.

- Speed F Maximum speed
- Alarm (Green) : Alarm OFF
 (Red) : Alarm ON
 (Orange): Stage is unconnected.
- Alarm type Blank : Alarm OFF
 Stage is unconnected, Driver alarm, Scale alarm, Retry over alarm
- Limit +, - (Gray) : Limit OFF
 (Red) : Limit ON
- BUSY/READY BUSY (Green) : BUSY
 READY (Green) : READY



⑤ Speed

Choose a kind of the speed to set, and input a value of the speed.

Click a "Set" button and then the input speed is set.

Input a speed.
S: Minimum speed
F: Maximum speed
R: acceleration / deceleration time

Choose a kind of the speed to set.

Click a "Set" button and then the input speed is set.

⑥ I/O check lamp

Display the state of the I/O signal.

In the case of OFF, a signal is displayed in ■ (gray). In the case of ON, a signal is displayed in ■ (green).

5. Terminal screen

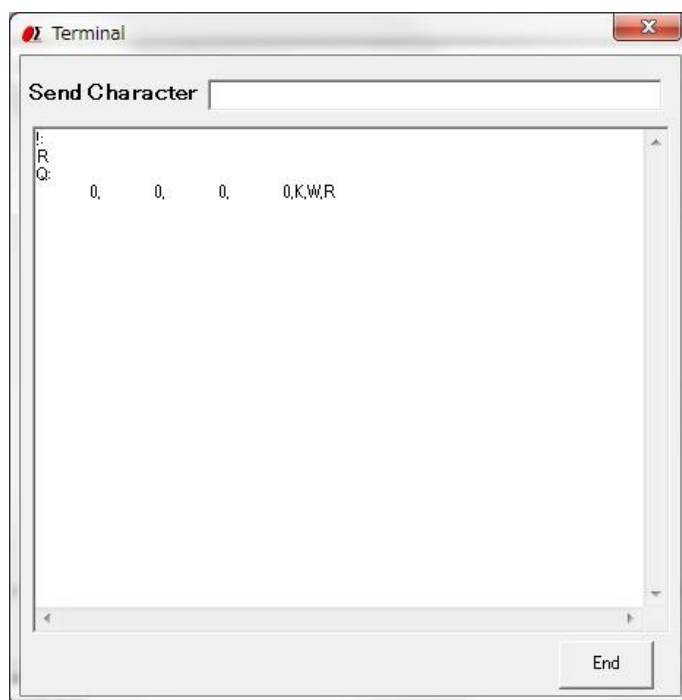
The controller will be controlled by commands on the terminal screen.

Send commands to control the controller and stages.

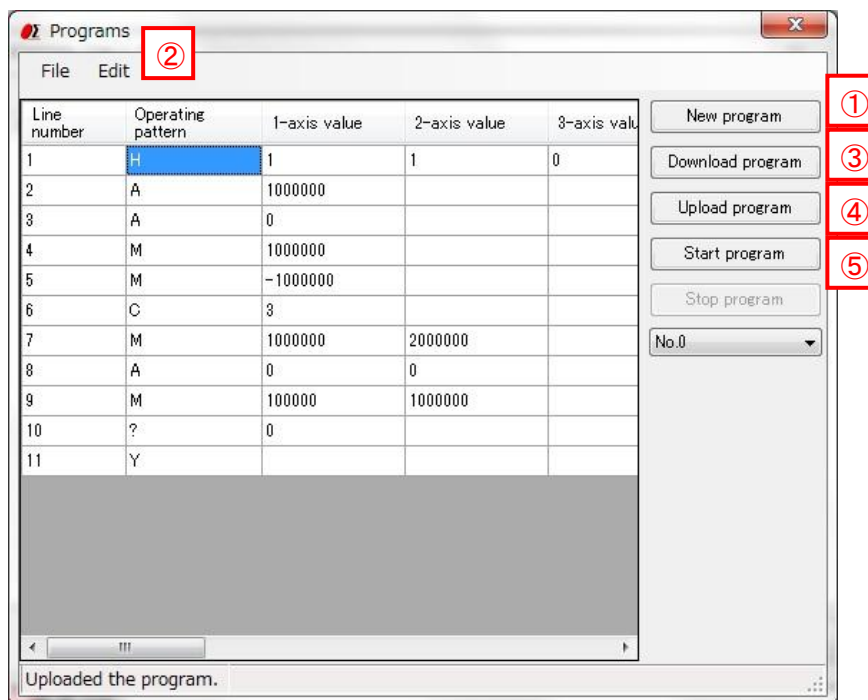
Or check the current status of stages and I/O interfaces with status checking command (Q:) or I/O checking command (I:) etc.

Input the character string into "Send Character" and push Enter key, the command will be sent.

The returned data will be displayed in the text box below.



6. Program screen

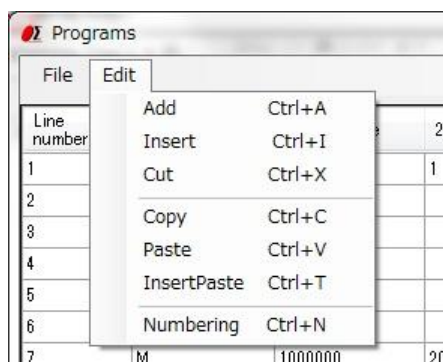


① New program

- When clicking the button, blank lines are displayed.
Input contents according to a program description method.

② Edit program

- The program can be edited, such as insert/copy/add/cut etc. with “Edit” of dropdown menu.
※Please reset the line numbers after line edit.
- Please move the cursor to rewrite (overwrite) the data.



③ Download program

- The program in the screen can be sent (downloaded) to the controller.
A message “Succeeded in downloading the program.” will be displayed on the screen, if the download finished normally.

④ Upload program

- Read (upload) a program from the controller.

A message “Uploaded the program.” will be displayed on the screen when the upload finished normally and program data is displayed.

- The uploaded program can be saved as a CSV file.

And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

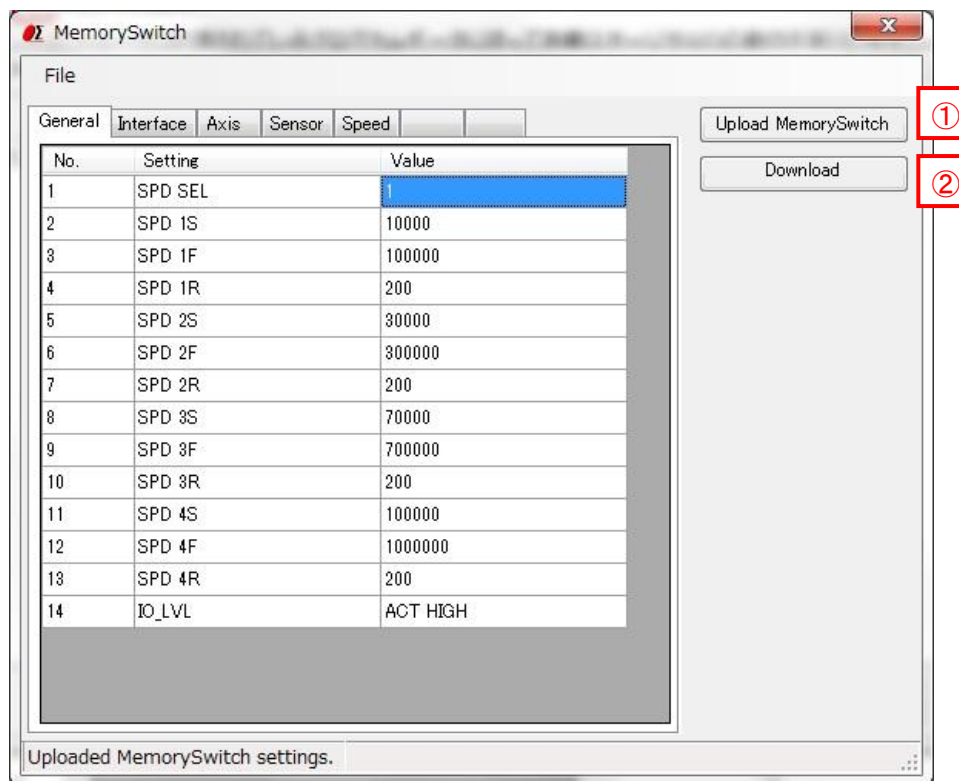
⑤ Start program

- Execute the program which is stored in the controller and drive motorized stages or I/O interfaces.

※The controller can store ten programs. (No.0 - 9).

Please choose the program number, when you download, upload and execute a program.

7. Memory switch screen



① Upload Memory Switch

- Read (upload) the contents of the memory switch from the controller.

A message of “Uploaded Memory Switch settings.” will be displayed, if the upload finished normally. And the contents of memory switch will be displayed on the screen.

- The uploaded contents of the memory switch can be saved as a CSV file. And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

② Download Memory Switch

- The contents of memory switch in the screen can be sent (downloaded) to the controller. A message “Succeeded in downloading Memory Switch.” will be displayed, if the download finished normally.

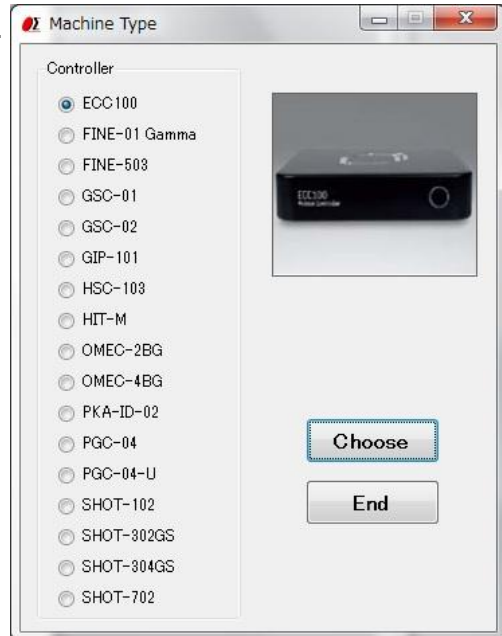
SGSample operation manual (ECC100 edition)

1. Machine Type screen

The Machine Type screen is displayed when you run SGSample.

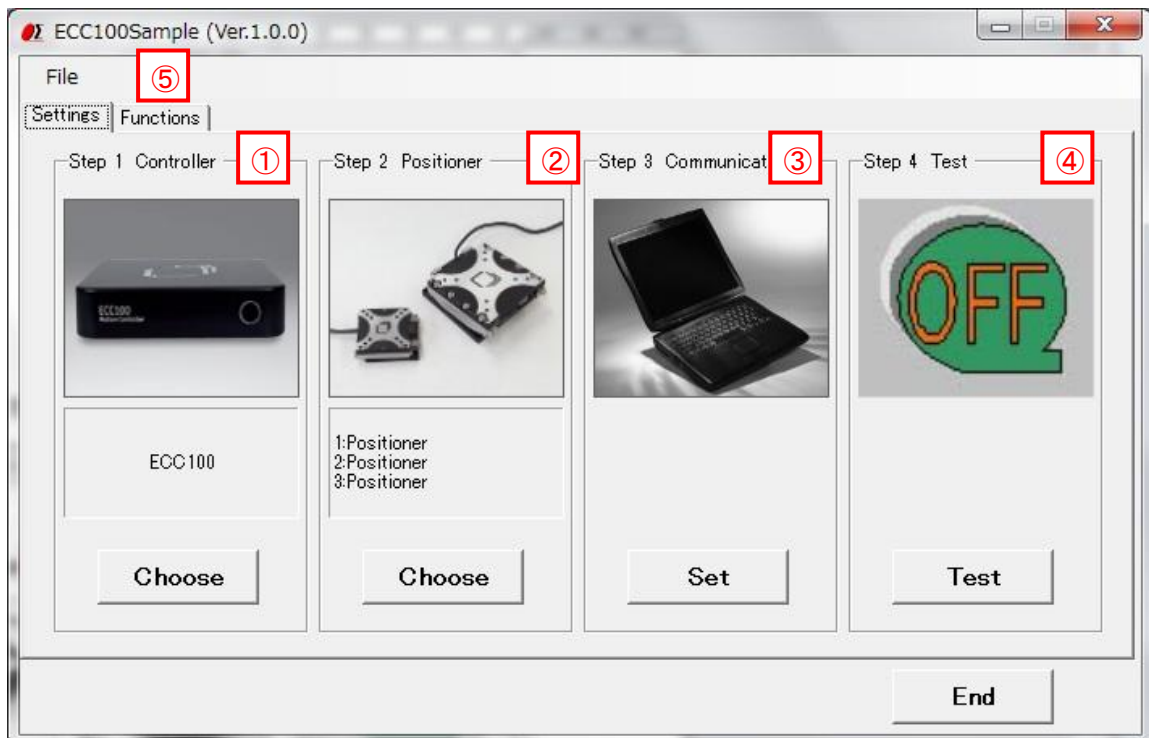
Choose a controller to use, and click a "Choose" button.

SGSample is finished when you click an "End" button.



2. Settings screen

Set the parameters from step 1 to step 4 sequentially.

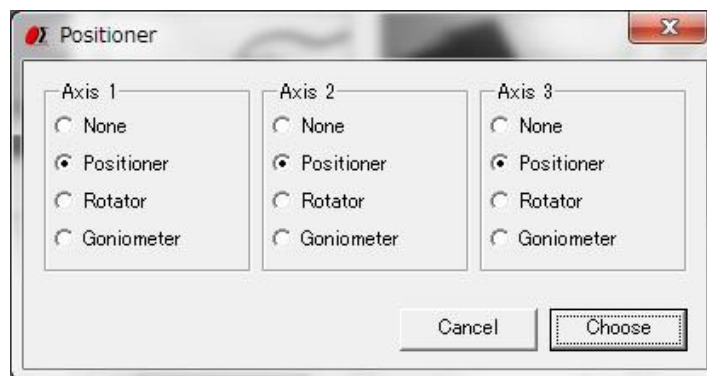


① Step 1 Controller choice

The controller which you chose with the Machine Type screen is displayed.
When you change a controller, click a "Choose" button.

② Step 2 Positioner choice

Click a "Choose" button, and then a positioner choice screen is displayed.
Choose a positioner to use with the screen.



③ Step 3 Communication setting

Click a "Set" button, and then a communication properties screen is displayed.



Stop confirmation type : Choose a type to confirm that a positioner stopped after movement.

•Wait until enter the in-position range

... It waits until a current position enters the in position range.

The value specified for the in-position range completes the positioning if the travel reaches this range against your travel instruction.

You can specify by 0.001 (μm or m°) from 0 to 10.

Example) when you set a movement position with 100 μ m and set an in-position range with 0.1 μ m

-> Wait until a current position enters the ranges less than 100.1 μ m more than 99.9 μ m.

•Wait until stop confirmation time

••• After having started movement, wait until specified time passes. If time passes, it is considered to be a stop, and other operation is enabled.

You can specify from 0 to 600 seconds.

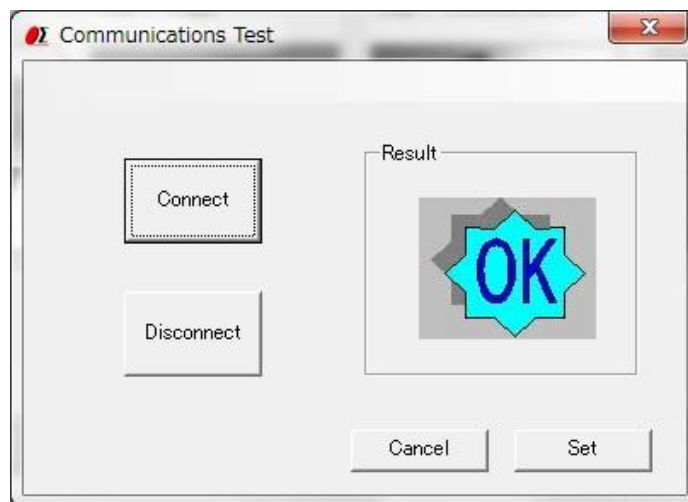
•Wait until a stop button is pushed

••• Even if it seems that movement is finished as a positioner stopped, it waits until a stop button is pushed. When a stop button is pushed, other operation is enabled.

④ Step 4 Communication Test

Click a "Test" button, and then a communication Test screen is displayed.

Test a communication with the screen.



Click the "Connect" button, then a result will be displayed.

When you terminate the communication, click a "Disconnect" button.

When a connection result is OK, click a "Set" button, then **3. Functions screen** displayed.

When a connection result is NG, please check the interface parameters, the controller setting and cables, and then try the communication test again.

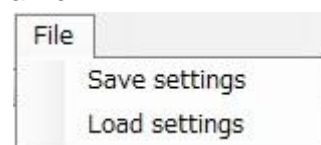
⑤ File menu

•Save settings

Save positioner choice contents and communication setting in a file.

•Load settings

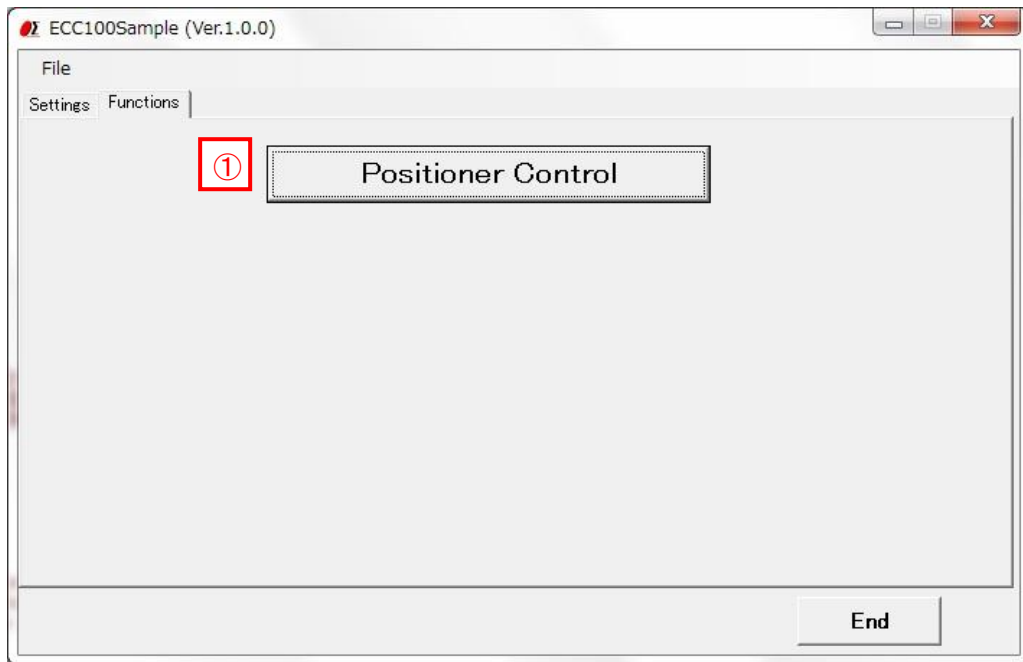
Read the saved setting file, and restore setting contents.



3. Functions screen

At the time of connection OK, you can display a functions screen.

When you change various settings, click a "Settings" tab and display **2. Settings screen**.



① "Positioner Control" button

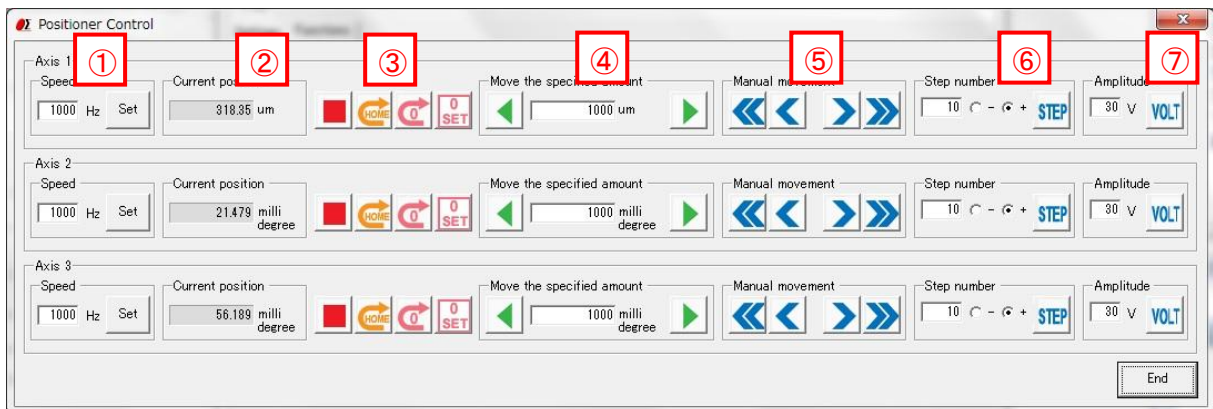
Click a button, and then a positioner control screen is displayed.

The positioners can be operated by clicking the buttons in the positioner control screen.

4. Positioner Control screen

The positioners which are connected to the controller can be operated by clicking the buttons in the screen.

When the screen is displayed, the current set speed and voltage are displayed.



① Speed

Enter the desired frequency of the voltage signal. The speed of the positioner rises when frequency is raised.

The allowed frequency values range from 1 Hz to 2 kHz.

Input the number of the frequency and click "Set" button. The speed is set.

② Current position

Display the current position of a positioner.

③ Axis operation button



Click to stop the stage.



Detect the reference marker and move to the position and set a coordinate value to 0.





Move axis back to the logical origin. (Current 0)



Set current position to 0. (Logical origin)

④ Move the specified amount

Input quantity of movement and click  button. An axis moves quantity of movement that was input into the negative direction.

Click  button. An axis moves quantity of movement that was input into the positive direction.

⑤ Manual movement



While pushing a mouse left button, an axis moves to the negative direction fast. If the button is released, it stops.



While pushing a mouse left button, an axis moves to the negative direction slowly. If the button is released, it stops.




While pushing a mouse left button, an axis moves to the positive direction fast. If the button is released, it stops.



While pushing a mouse left button, an axis moves to the positive direction slowly. If the button is released, it stops.


⑥ Step number

Input the number of times of the step movement and choose a movement direction and click  button. An axis performs 1 step movement for the specified number of times.

The step size is determined by the "Amplitude" value (V).

The allowed step number range from 1 to 3000.

Amplitude

Input the number of the amplitude and click  button. The amplitude is set.

By changing this value, the step size of the positioner can be varied.

The allowed voltage values range from 0V to 45V.

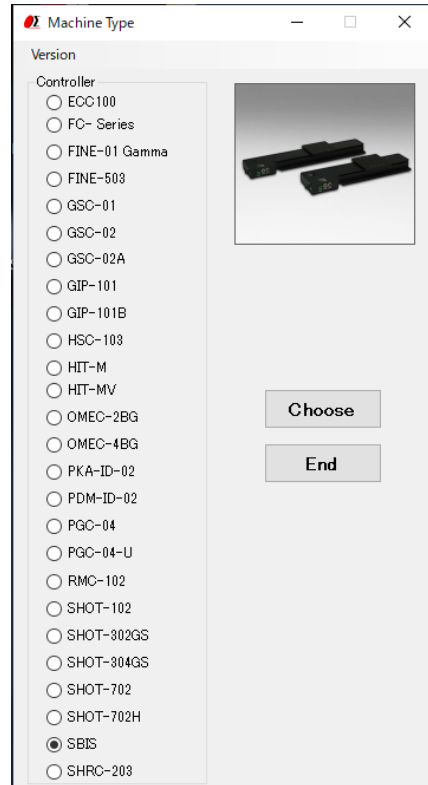
SGSample operation manual (SBIS edition)

1. Machine Type screen

The Machine Type screen is displayed when you run SGSample.

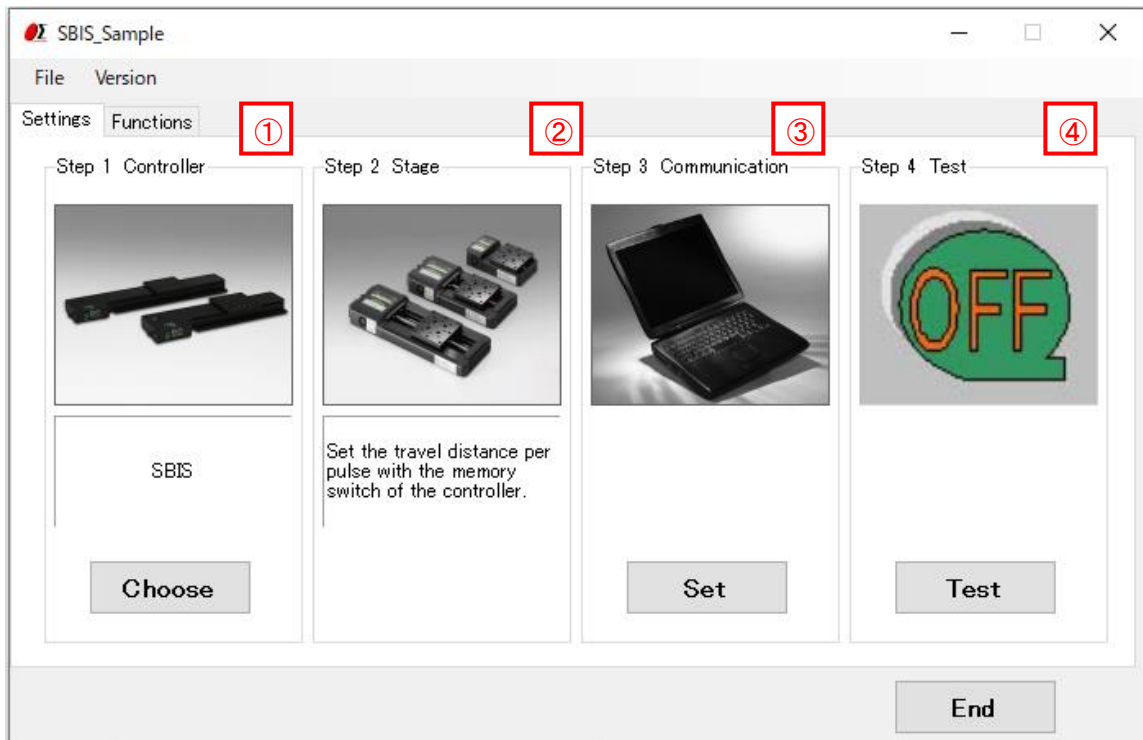
Choose a controller to use, and click a "Choose" button.

SGSample is finished when you click an "End" button.



2. Settings screen

Set the parameters from step 1 to step 4 sequentially.



① Step 1 Controller choice

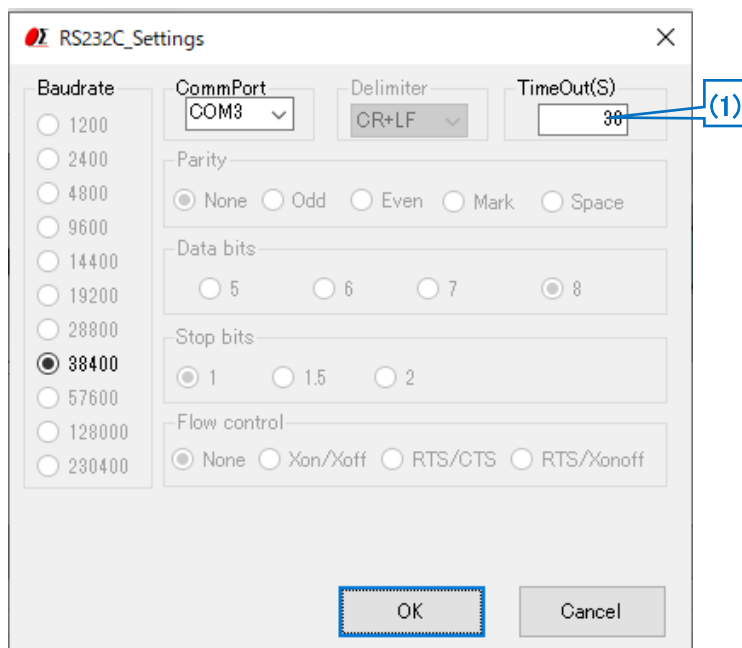
The controller which you chose with the Machine Type screen is displayed.
When you change a controller, click a "Choose" button.

② Step 2 Stage choice

SBIS does not need the stage choice.

③ Step 3 Communication setting

Click a "Set" button, and then a communication setting screen is displayed.



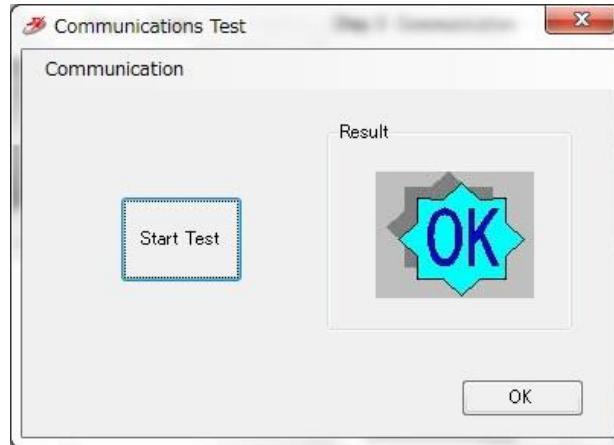
(1) Timeout

Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

④ Step 4 Communication Test

Click a "Test" button, and then a communication Test screen is displayed.

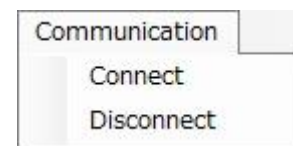
Test a communication with the screen.



Click the "Start Test" button, then a result will be displayed.

When you click "Connect" of the communication menu, the communication is confirmed whether communication is available. Unlike a "Start Test" button, it is not confirmed the transmission and reception of the command.

When you terminate the communication, click a "Disconnect" menu.



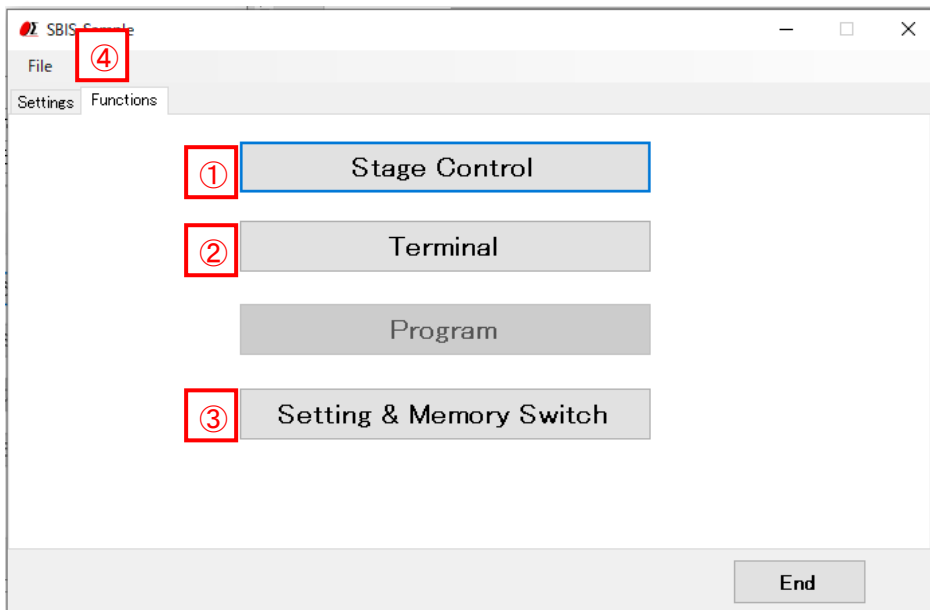
When a connection result is OK, click an "OK" button, then **3. Functions screen** displayed.

When a connection result is NG, please check the interface parameters, the controller setting and cables, and then try the communication test again.

3. Functions screen

At the time of connection OK, you can display a functions screen.

When you change various settings, click a "Settings" tab and display **2. Settings screen**.



① "Stage Control" button

Click a button, and then a stage control screen is displayed.

The stages can be operated by clicking the buttons in the stage control screen.

② "Terminal" button

Click a button, and then a terminal screen is displayed.

The controller will be controlled by commands on the terminal screen.

③ "Memory Switch" button

Click a button, and then a Memory switch screen is displayed.

You can upload, edit, and download a memory switch which is memorized in the controller inside.

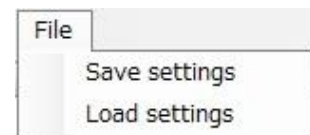
④ "File" menu

- Save settings

Save each set condition and contents in the setting file. (extension .sgh)

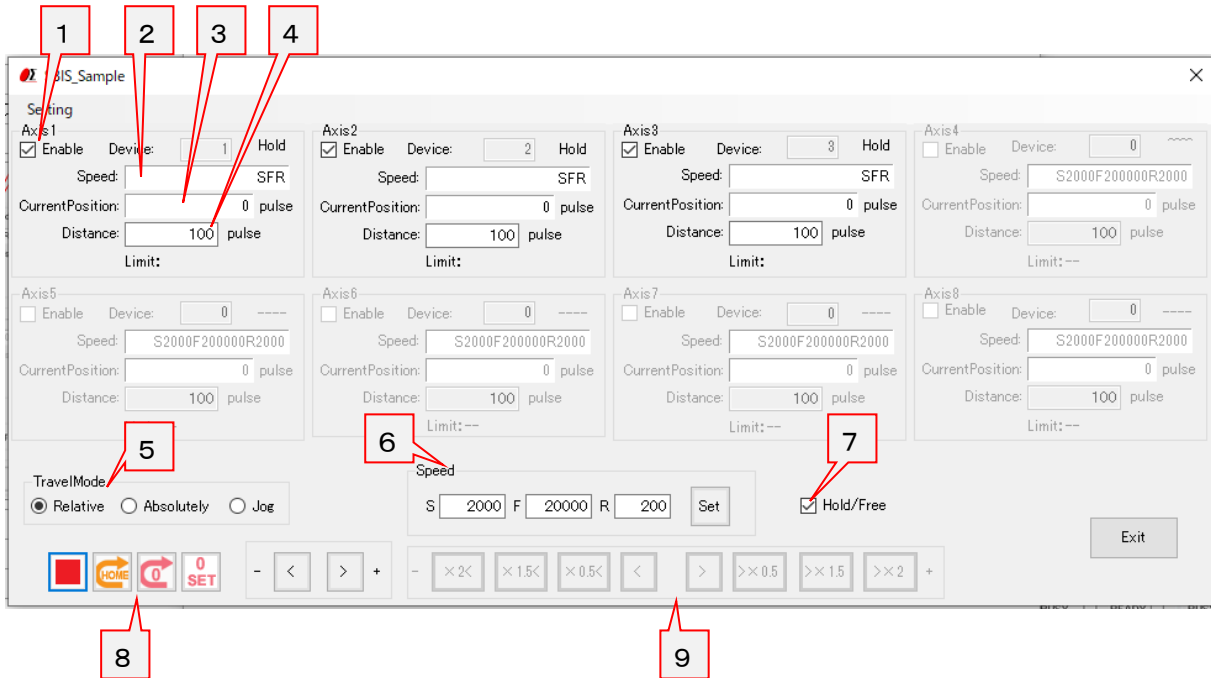
- Load settings

Read the saved setting file, and restore setting contents.



4. Stage Control screen

The stages which are connected to the controller can be operated by clicking the buttons in the screen.



1 Operation target axis

Select the axis to operate.

2 Speed

Displays the currently set speed.

3 Current Position

Displays the current position of the stage.

4 Distance

Set the amount to move the stage when "relative" or "absolute" is specified.

5 Travel Mode

Select the travel mode from "relative", "absolute" and "jog".

6 Speed Setting

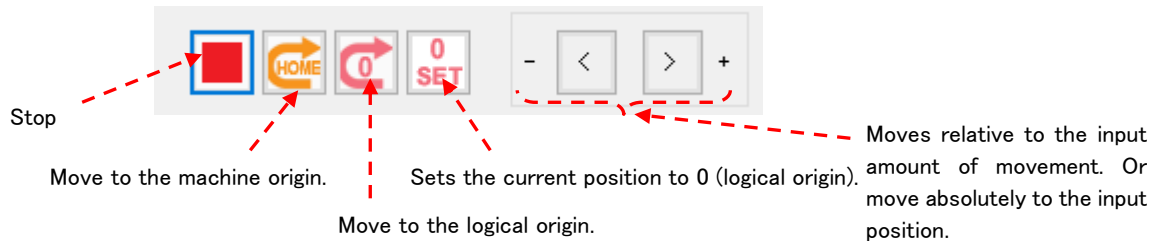
Enter the speed to be set and click the "Set" button to set the entered speed.

7 Hold/Free

Switches the excitation state of the stage.

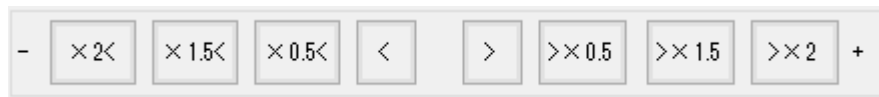
8 Movement Operation

Perform movement operations for "relative" movement and "absolute" movement.



9 Movement Operation

Performs the movement operation for "jog" movement.



Move while holding down the left mouse button.
Release the button to stop.
Each button operates at the display times of the current

10 "Exit" button

Click a button and then close the stage control screen.

5. Terminal screen

The controller will be controlled by commands on the terminal screen.

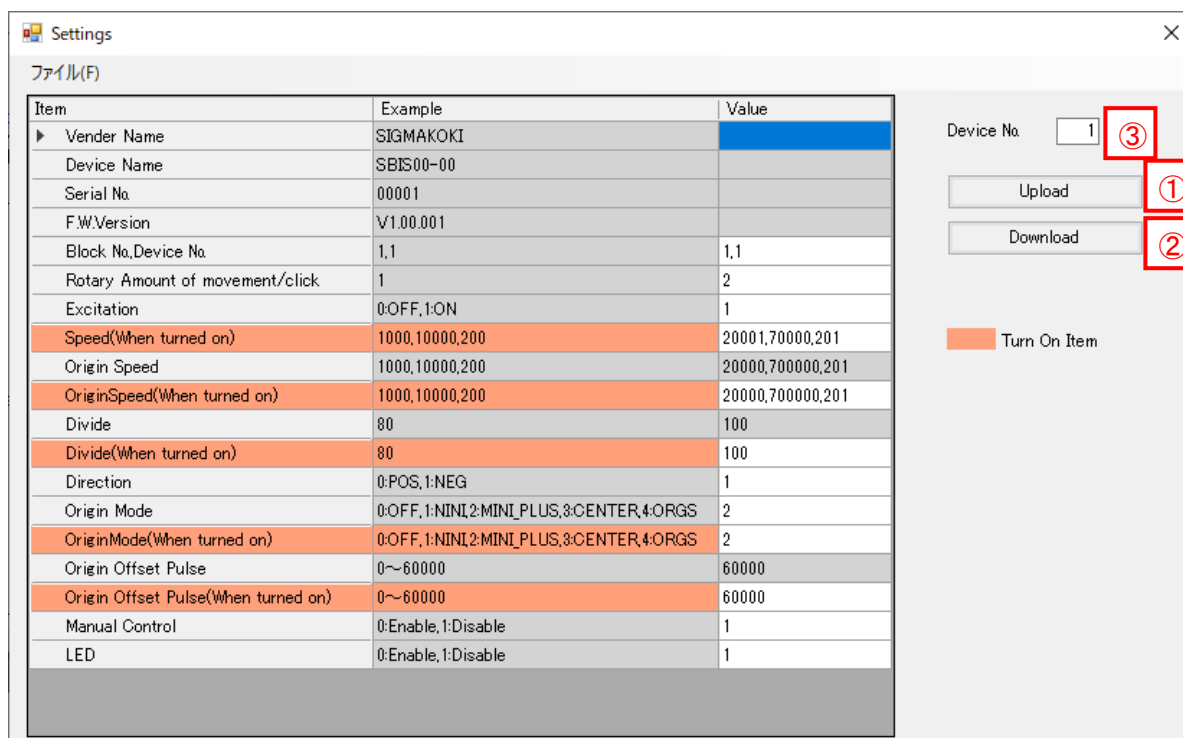
Send commands to control the controller and stages.

Input the character string into “Send Character” and push Enter key, the command will be sent.

The returned data will be displayed in the text box below.



6. Memory switch screen



① Upload

- Read (upload) the settings from the SBIS.
If the upload is successful, the settings will be showed on the screen.
- The uploaded contents of the memory switch can be saved as a CSV file. And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

② Download

- The settings in the screen can be sent (downloaded) to the controller.

③ DeviceNo.

- Specify the device No. to be displayed/edited.

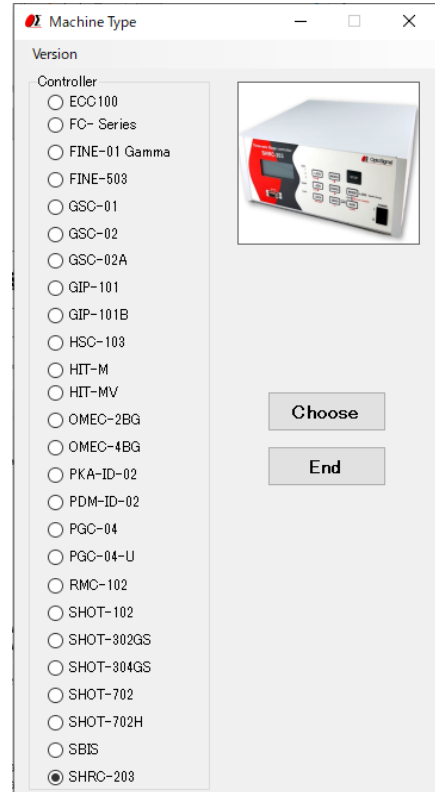
SGSample operation manual (SHRCedition)

1. Machine Type screen

The Machine Type screen is displayed when you run SGSample.

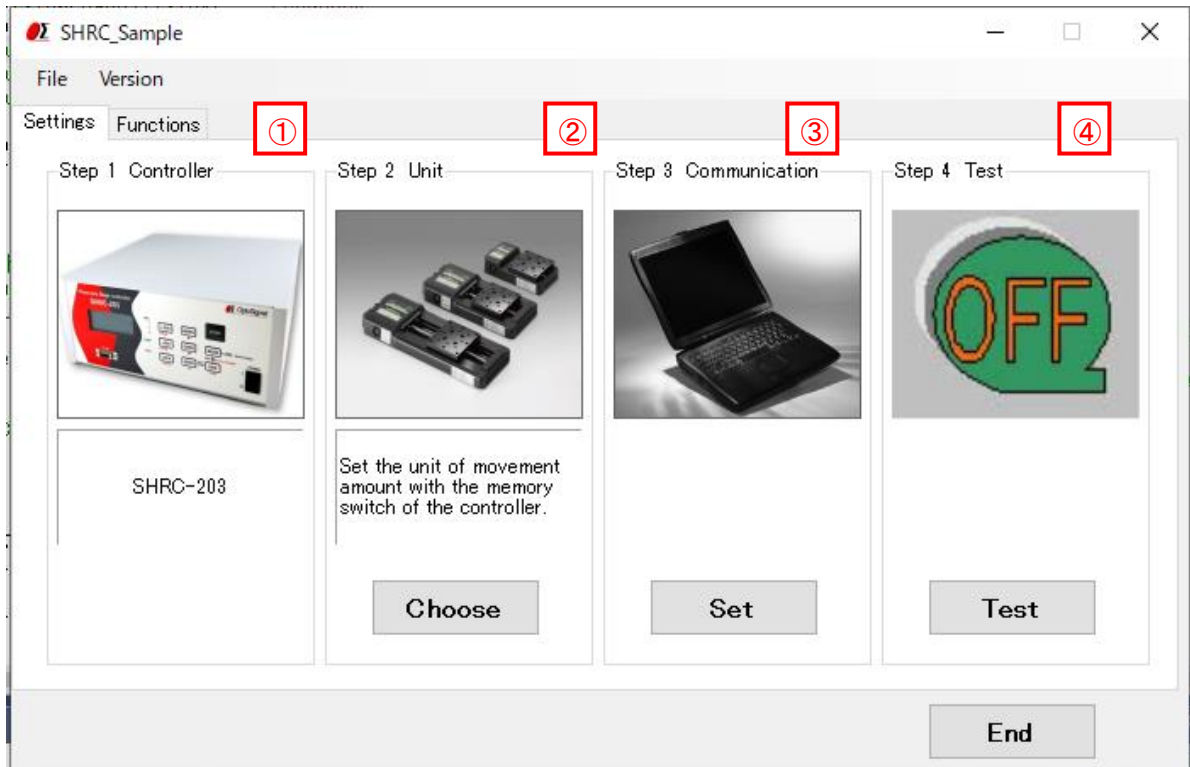
Choose a controller to use, and click a "Choose" button.

SGSample is finished when you click an "End" button.



2. Settings screen

Set the parameters from step 1 to step 4 sequentially.

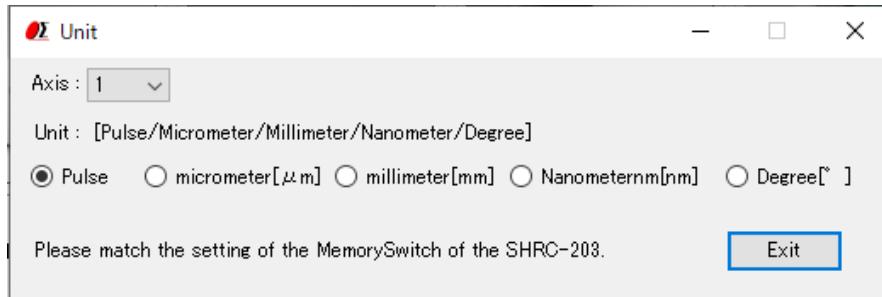


① Step 1 Controller choice

The controller which you chose with the Machine Type screen is displayed.

② Step 2 Unit choice

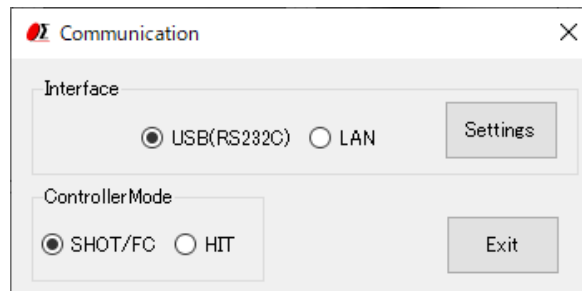
Click the "Choose"" button to display the unit selection screen, so select the unit to use.
(Set per axis. Match the unit with the controller setting.)



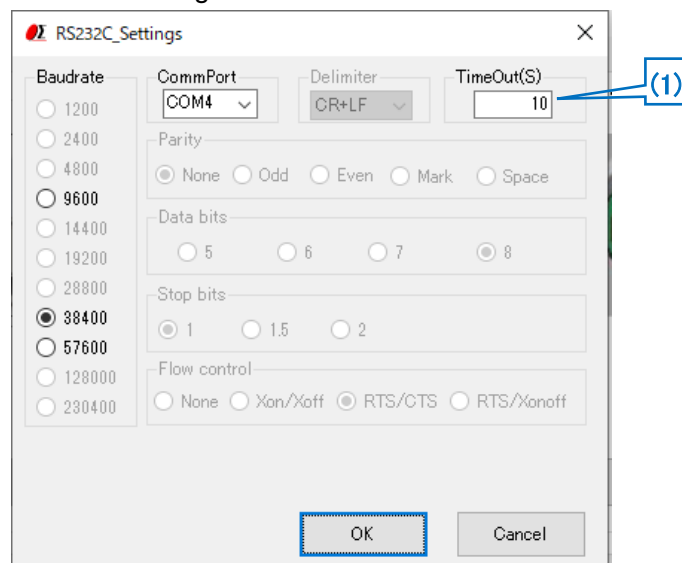
③ Step 3 Communication setting

Click the "Settings" button to display the communication interface selection screen. Select an interface and click the "Communication settings" button.

Also, select the operation mode of the controller (match the setting of the main unit).



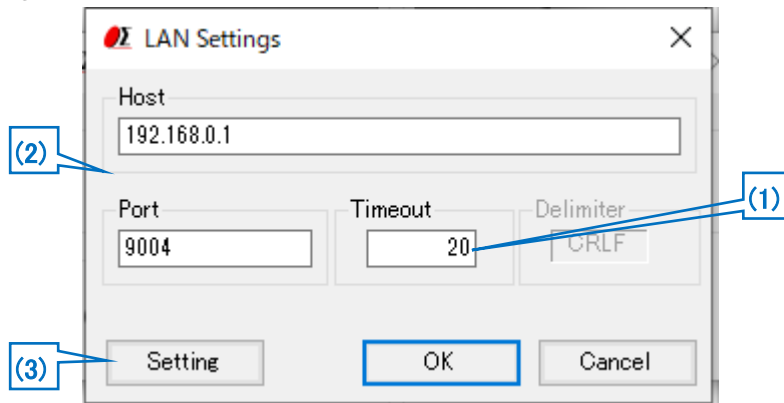
•RS232C communication settings



(1) Timeout

Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

•LAN settings



(1) Timeout

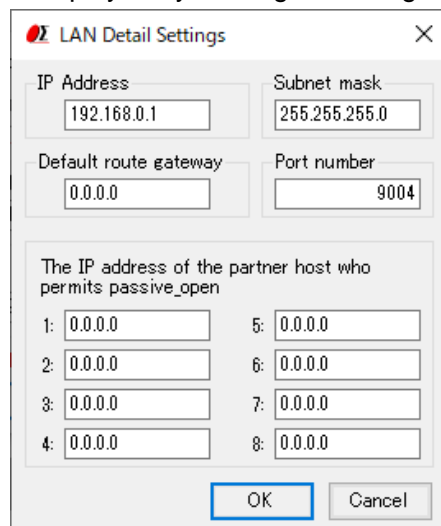
Timeout supervises passing time after starting reception. When the preset time specified for Timeout has passed, receiving process ends.

(2) Host, Port

Adjust a host and a port to settings of HIT-M connected at present. Factory default is host (IP address): 192.168.0.1 port: 9004.

(3) Setting

When you change the host (IP address) and port, change them with an LAN detail settings screen. The screen is displayed by clicking a "Setting" button.



Click "OK" button after setting IP address and others on LAN detail settings screen in accordance with PC condition.

※You set an interface of the memory switch of HIT in "Ethrnet" and make LAN available, and please set the LAN.

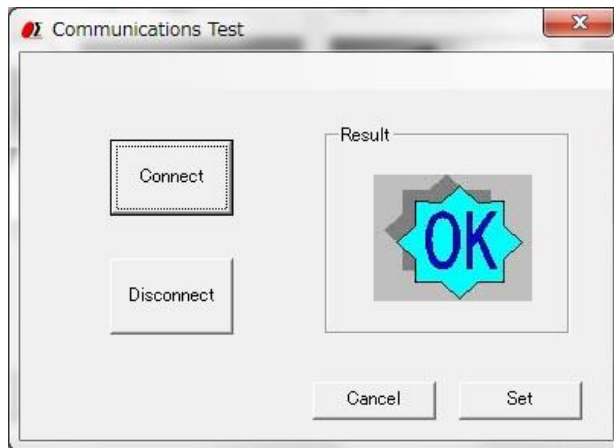
※When all the setting from 1 to 8 are "0,0,0,0", the IP address of the partner host who permits passive_open admits the passive_open from all IP addresses. Otherwise, it admits only Passive_Open from the IP except "0,0,0,0" set to 8 from 1.

※Redo PC settings according to new LAN settings when any changes have been made in settings.

④ Step 4 Communication Test

Click a "Test" button, and then a communication Test screen is displayed.

Test a communication with the screen.



Click the "Connect" button, then a result will be displayed.

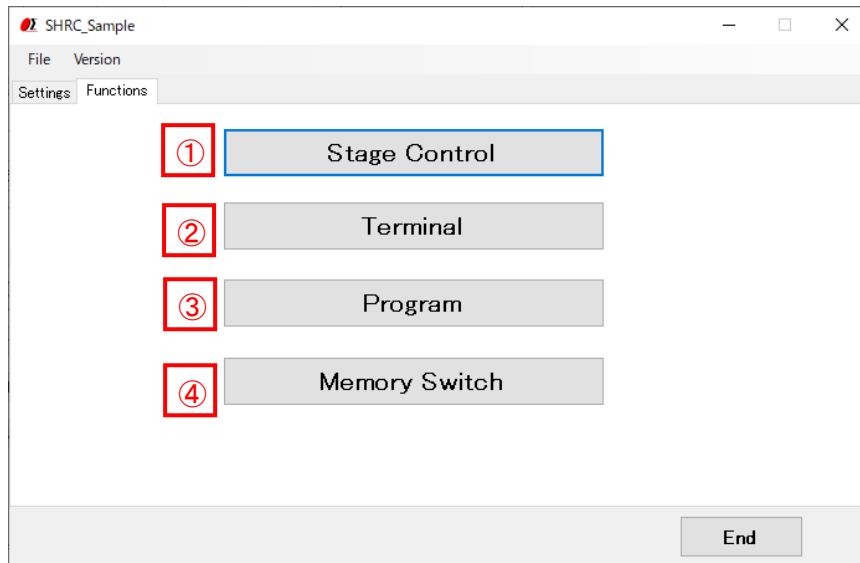
When you terminate the communication, click a "Disconnect" button.

When a connection result is OK, click a "Set" button, then **3. Functions screen** displayed.

When a connection result is NG, please check the interface parameters, the controller setting and cables, then try the communication test again.

3. Functions screen

At the time of connection OK, you can display a functions screen.



① “Stage Control” button

Click a button, and then a stage control screen is displayed.

The stages can be operated by clicking the buttons in the stage control screen.

② “Terminal” button

Click a button, and then a terminal screen is displayed.

The controller will be controlled by commands on the terminal screen.

③ “Program” button

Click a button, and then a program screen is displayed.

You can upload, edit, download, and run a program which is memorized in the controller inside.

(Only for SHOT-302GS/304GS, FINE503/01gamma)

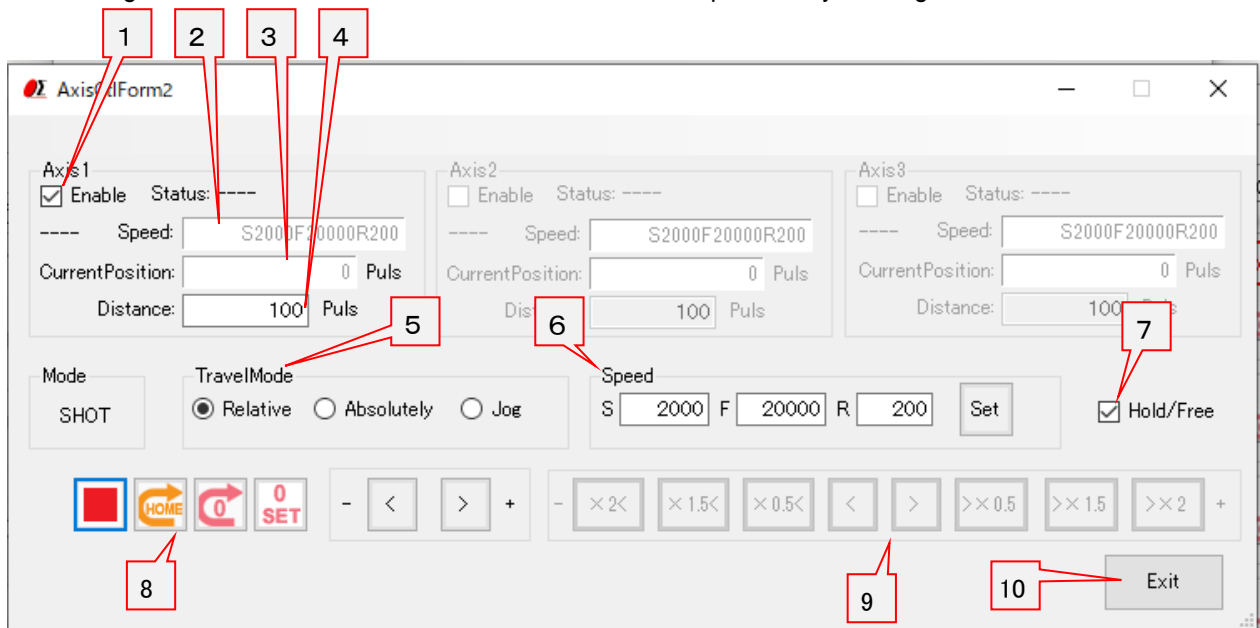
④ “Memory Switch” button

Click a button, and then a Memory switch screen is displayed.

You can upload, edit, and download a memory switch which is memorized in the controller inside. (Only for SHOT-302GS/304GS, SHOT-702, FINE503/01gamma, PKA-ID-02, GSC-01A)

4. Stage Control screen

The stages which are connected to the controller can be operated by clicking the buttons in the screen.



① Operation target axis

Select the axis to operate.

② Speed

Displays the currently set speed.

③ Current Position

Displays the current position of the stage.

④ Distance

Set the amount to move the stage when "relative" or "absolute" is specified.

⑤ Travel Mode

Select the travel mode from "relative", "absolute" and "jog".

⑥ Speed Setting

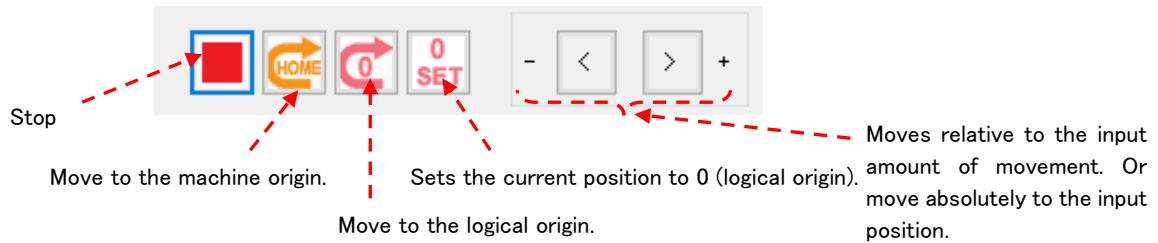
Enter the speed to be set and click the "Set" button to set the entered speed.

⑦ Hold/Free

Switches the excitation state of the stage.

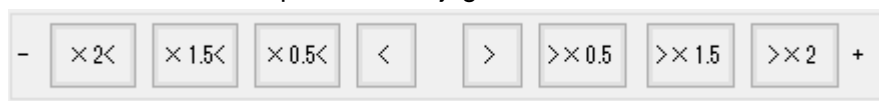
⑧ Movement Operation

Perform movement operations for "relative" movement and "absolute" movement.



⑨ Movement Operation

Performs the movement operation for "jog" movement.



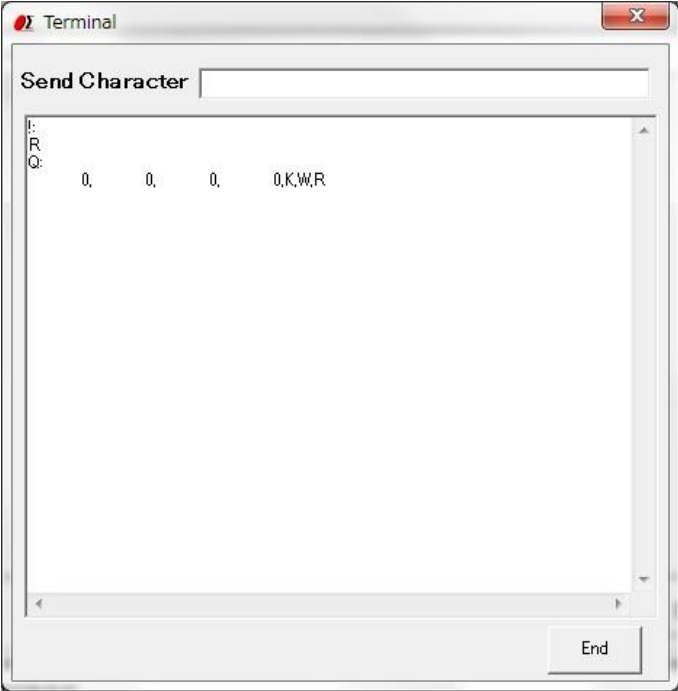
Move while holding down the left mouse button.
Release the button to stop.
Each button operates at the display times of the current

⑩ Exit" button

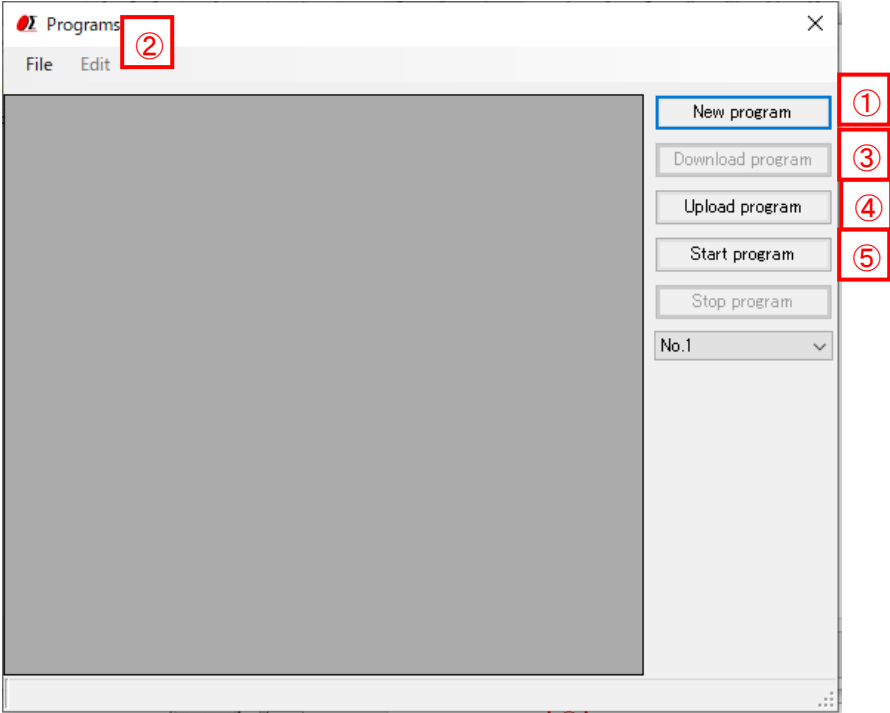
Click a button and then close the stage control screen.

5. Terminal screen

The controller will be controlled by commands on the terminal screen.
Send commands to control the controller and stages.
The returned data will be displayed in the text box below.

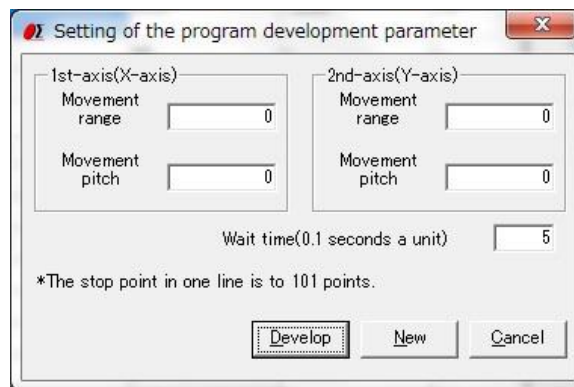


6. Program screen



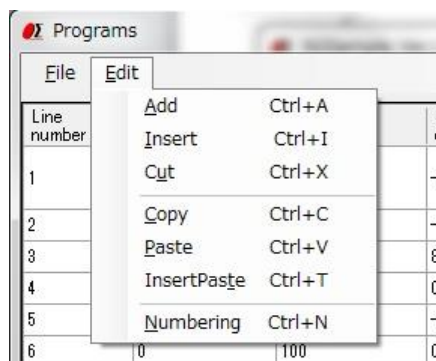
① Create program

- When composing a new program, click the “Create program” button, there will be a programming screen.
- When clicking “New” button, there is a blank screen with blank cells. Please fill in the data into them.
- Click the “Develop” button after inputting movement range and pitch, a program will be created automatically.
- You can download or upload the program from or to controller, and drive stages by the program.



② Edit program

- The program can be edited, such as insert/copy/add/cut etc. with “Edit” of dropdown menu.
※Please reset the line numbers after line edit.
- Please move the cursor to rewrite (overwrite) the data.



③ Download program

- The program in the screen can be sent (downloaded) to the controller.
A message “Downloading the program is completed.” will be displayed on the screen, if the download finished normally.
- The controller can store two programs. (No.1/No.2)
Please choose the No.1 or No.2, when you download a program.

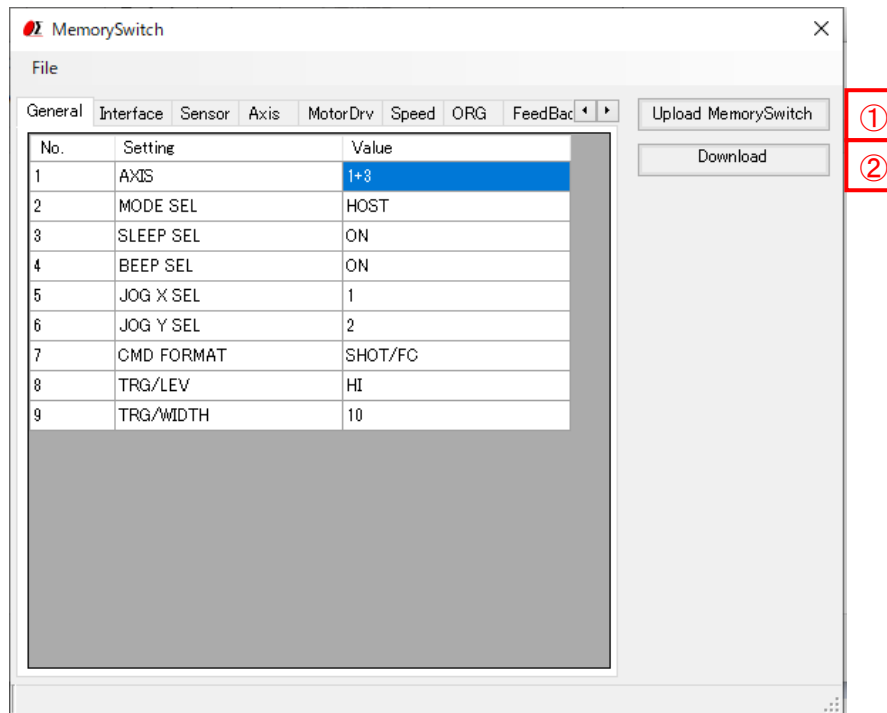
④ Upload program

- Read (upload) a program from the controller.
A message "Uploading the program is completed." will be displayed on the screen when the upload finished normally and program data is displayed.
- The controller can store two programs. (No.1/No.2).
Please choose the No.1 or No.2, when you upload a program.
- The uploaded program can be saved as a CSV file.
And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

⑤ Start program

- Execute the program which is stored in the controller and drive motorized stages or I/O interfaces.
- The controller can store two programs. (No.1/No.2).
Please choose the No1 or No 2, when you execute a program.

7. Memory switch screen



① Upload Memory Switch

- Read (upload) the contents of the memory switch from the controller.
A message of “Uploading the Memory Switch is completed.” will be displayed, if the upload finished normally. And the contents of memory switch will be showed on the screen.
- The uploaded contents of the memory switch can be saved as a CSV file. And an edited (changed) CSV file can be opened with file menu too. Please open it from File menu.

② Download Memory Switch

- The contents of memory switch in the screen can be sent (downloaded) to the controller.
A message “Downloading the Memory Switch is completed.” will be displayed, if the download finished normally.