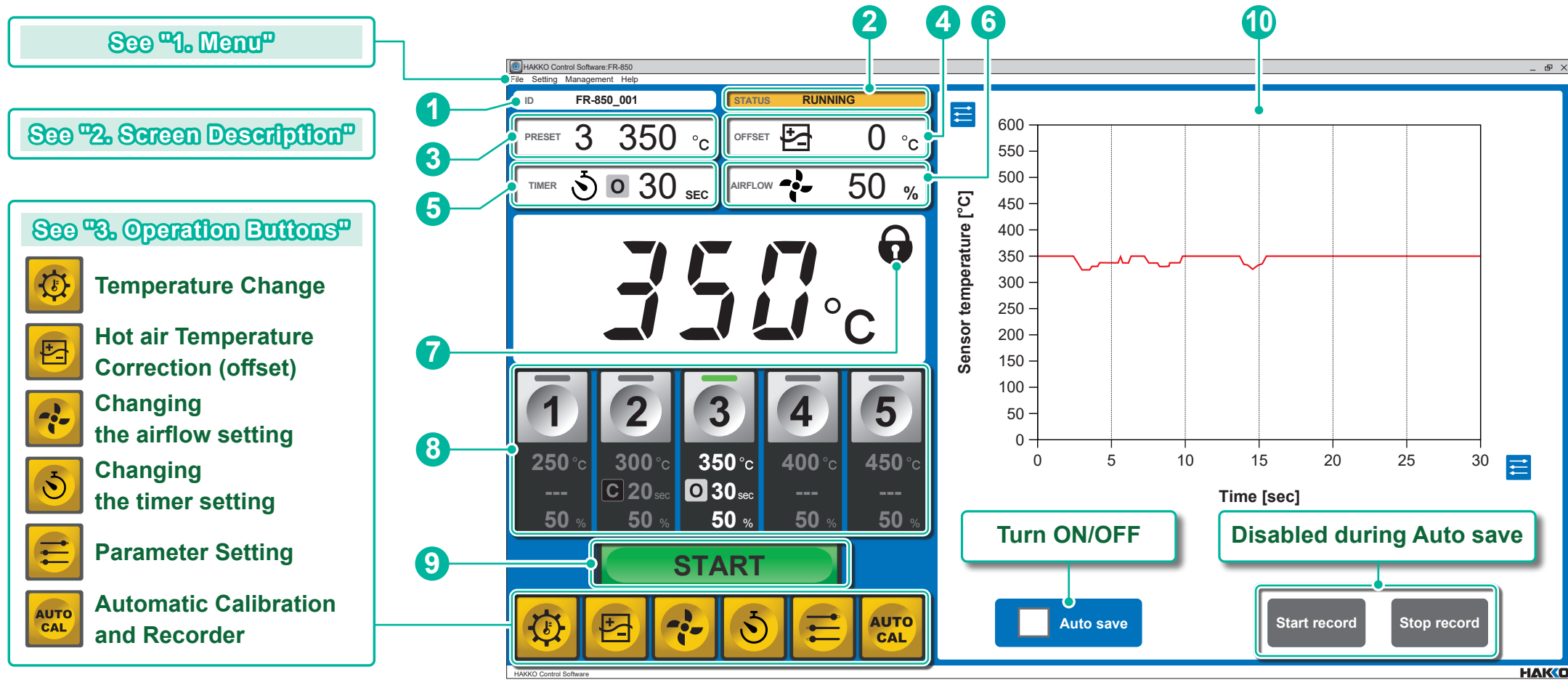


HAKKO Software FR-850 Operation manual



1. Menu

File

- Port selection**
Used to manually select Port Number.
- Exit**
Used when exiting software.

Setting

- Language: Japanese/English/Chinese**
Select one of these languages.
- Display temperature unit: °C/°F**
Select the unit for temperature.
- Display graph: ON/OFF**
Select whether to display the graph on the main screen.
NOTE Default is ON.
- Select application**
Select the unit.

Help

- Connection unit version information**
Shows the connection unit firmware version.
- Version information**

Management

- File storage location:**
Parameter setting file/
Automatic calibration result file/
Sensor temperature monitor file
Select where files are saved.
NOTE By default, files are saved in the same location as software folder.
- Sensor temperature monitor auto save: ON/OFF**
When set to **[ON]**, the sensor temperature will be recorded constantly and saved as CSV file.
NOTE Default is OFF.
- Sensor temperature monitor file split interval (minutes): 1 to 120**
Segments CSV files into multiple files based on minutes.
NOTE Default is 5 min.
- Log file: ON/OFF**
Operation logs can be recorded when operations or setting changes are performed on this app and unit.
NOTE Default is ON.

2. Screen Description

- 1 **Connection unit name** is displayed.
The connection unit can be named in the section **[ID]** of the Parameter Setting button.

The operating status of the connection unit is displayed.

RUNNING Operating normally	SENSOR ERROR Nozzle heating element/sensor not detected	HEATER DRIVE ERROR The main unit is damaged
SHUT OFF Time specified in the ShutOff Menu has elapsed	NO CONNECTION Connection unit is turned OFF or the main unit is not connected to the PC	
STANDBY Heater is not energized and on standby	ZEROCROSS ERROR Power supply abnormality or the main unit is damaged	

The Setting Temp status is displayed.

- Manual inputting temperature displays **[SET TEMP]**
- Preset temperature displays **[PRESET]** and the preset number.

3

Connection unit display

350 °C

350 °C

Connection unit display

350 °C

350 °C

This can be done through the Temperature Change button.

If the temperature is changed here, the preset temperature selection is automatically canceled.

You can change the Setting Temp manually or by selecting one of the preset temperature buttons.

The correction value (offset value) is displayed.

- 4 The offset can be changed using the Temperature Correction button or the Automatic Calibration and Recorder button.

- The timer **mode and set time** are displayed.
You can change the settings using the button.

5

Opened timer:
Count starts after the temperature reaches the set temperature.

Closed timer:
Count starts when the power to the heater is turned on.

Setting time range: 1 to 999 seconds

- 6 The **airflow** setting is displayed.
You can change the setting using the button. Setting range : 5 to 100%

- 7 Displayed when **the parameter setting change is locked**.
This can be locked/unlocked in the **[Lock Menu]** of the Parameter Setting button.

- The settings programmed** for each preset number are displayed.
You can change the programmed temperature, timer settings, and airflow in the **[Preset Setting Menu]** of the button.

8

Factory default setting

- Set temperature
No.1: 250°C (600°F)
No.2: 300°C (700°F)
No.3: 350°C (750°F)
No.4: 400°C (800°F)
No.5: 450°C (850°F)
- Timer Settings: OFF
- Set airflow 50%

Preset number

Programmed temperature

Programmed timer

Programmed airflow

Selected

Selectable

The preset temperature selection status is shown by the button color.

- Used to turn hot air **ON/OFF**.

- 9
- When you click **[START]**, hot air will begin flowing and the screen will display **[STOP]**.
 - When you click **[STOP]**, the power to the heater will turn off, cooling will begin, and the screen will display **[START]**.

The sensor temperature can be displayed on a graph.

- The graph data can be manually or automatically saved.
Manually record: Pressing **[Start record]**, pressing **[Stop record]** ends the recording
Recording with Auto save: Files will be saved depending on the value inputted in **[Sensor temperature monitor file split interval (minutes)]**.

- Saved file name
During manual saving: FR-850TEMP_M_250101_093358.csv
During automatic saving: FR-850TEMP_250101_093358.csv

Date stamp of recording: January 1, 2025, 9:33:58

See **[Management]** in "1. Menu" for the storage location and the auto save timing.

- The graph "Time axis" and "Temperature axis" settings can be changed.
Click button to display the Setting screen.

10

Time Axis Setting

Length of time displayed: 30 sec

Scale interval: 5 sec

Confirm Close

Temperature Axis Setting

Maximum Temperature Displayed: 200 °C

Minimum Temperature Displayed: 0 °C

Scale interval: 10 °C

Confirm Close

Time axis default		Temperature axis default	
Length of time displayed	30 seconds	Maximum Temperature Displayed	600°C/1150°F
Time Scale Interval	5 seconds	Minimum Temperature Displayed	0°C/0°F
		Temperature Scale Interval	50°C/50°F

3. Operation Buttons



Temperature Change

- Change the set temperature
Temperature range: 50 to 600°C (120 to 1150°F)

NOTE If the temperature is changed here, the preset temperature selection is automatically canceled.



Hot air Temperature Correction (offset)

(See "4-3. Operation" in the Instruction Manual)

- The hot air temperature can be corrected with the following two methods.

NOTE

This will not function when the connection unit is in offset mode.

Manual input

- Measure the hot air temperature
- Input the offset value
- Click the **[Confirm]** button
- Click the **[Close]** button

Using the HAKKO thermometer with the Temperature Sending Function

- Measure the hot air temperature
- Send the measured temperature
- Click the **[Confirm]** button
- Click the **[Close]** button



Changing the airflow setting

- Airflow can be changed
Airflow setting range: 5 to 100%



Changing the timer setting

- Timer can be changed
Setting time range: 1 to 999 seconds
- Timer setting mode can be changed

Timer setting mode

[OFF] Use without setting the timer.
[Opened] Set to opened timer.
[Closed] Set to closed timer.



Parameter Setting

(See "6. Parameter Settings" in the Instruction Manual)

The current settings are highlighted in blue **A** and can be changed in the column to the right **B**. By clicking the **[Confirm]** button the buzzer will sound, and **[Sys]** or **[Set]** will display on the connection unit to show the settings have been updated.

- The settings can be saved or loaded as CSV files.
Click the **[Save]** button to store the settings from **B**.
Default file name: FR-850-Parameter.csv

Click the **[Load]** button and select CSV file to input the settings, and then click **[Confirm]** to apply the settings.
* The file name is displayed in the upper left corner.



If the selected file name has an " * "...

When the **B** values are changed after loading, " * " mark will be added at the end of the file name.
Example: FR-850-Parameter.csv*

Parameter No. correspondence table

Parameter No. correspondence table			
Alarm Menu		Quick Start Setting	
Error Alarm	Parameter No. 05	ON/OFF	Parameter No. 38
Ready Alarm	Parameter No. 06	Lock Menu	
Operating Mode Change Alarm	Parameter No. 39		Parameter No. 14
ShutOff Menu		Preset Settings Menu	
ON/OFF	Parameter No. 08	Preset Settings	Parameter No. 23
Activation Time	Parameter No. 18	Chain-Preset ON/OFF	Parameter No. 22

If the ID of the connection unit is not registered, it will be displayed as bellow.

Confirm the changed values

Load File

Save File

HAKKO Software FR-850 Operation manual

3. Operation Buttons (cont'd)



Automatic Calibration and Recorder

What is Automatic Calibration?

It is an operation to automate hot air temperature management, and to save the proper calibration results.

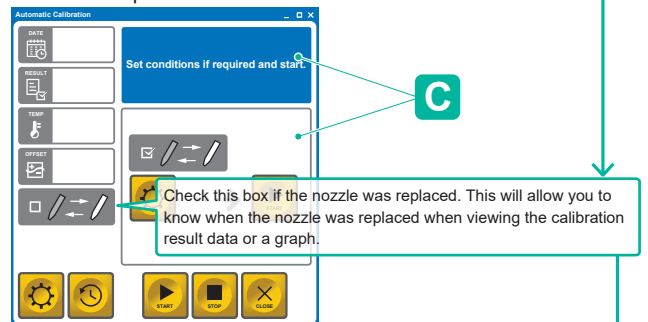
- Automatically saves the calibration results when the calibration is completed

- Compiles one month of saved calibration results in one CSV file
File name: FR-850CAL_2025_03.csv

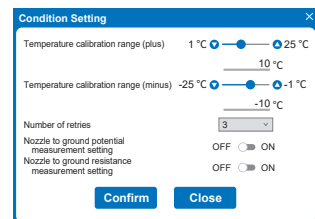
Product Name Calibration year and month

Station ID	Handpiece	Date&Time	Result	Set Temp	Temp Lim	BeforeTemp	After Temp	Before Offset	After Offset	Earth Pot	Earth Res	Nozzle Che
FR-850_001	FR-8501	2025/3/14 16:06	PASS	350°C	+10~-10	0351°C	---	005°C	---	0.4	0	0
FR-850_001	FR-8501	2025/3/15 9:06	PASS	350°C	+10~-10	0365°C	---	005°C	-10°C	0.5	0	0

Calibration procedure



- Set the conditions during Automatic calibration with the button.



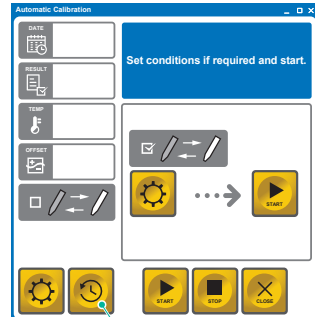
- Click the button and follow message to calibrate.
Set the conditions during.

Calibration results

You may select one of the following search conditions.

- ID SearchSearch by specific ID
- Date SearchSearch by specific period by date
- Handpiece Search.....Search by specific Handpiece
- Number of historiesSearch number of recent histories

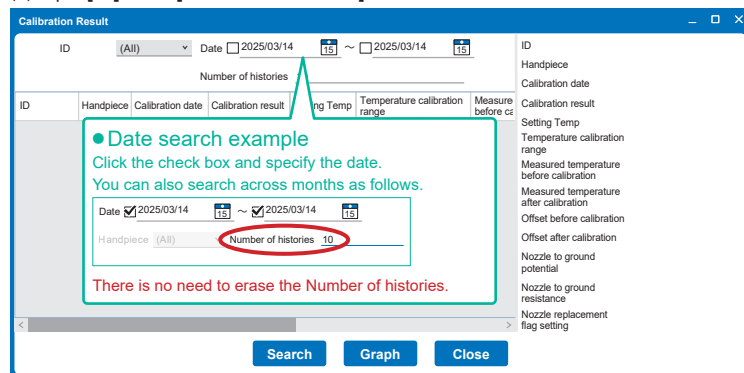
Procedure to display the calibration results



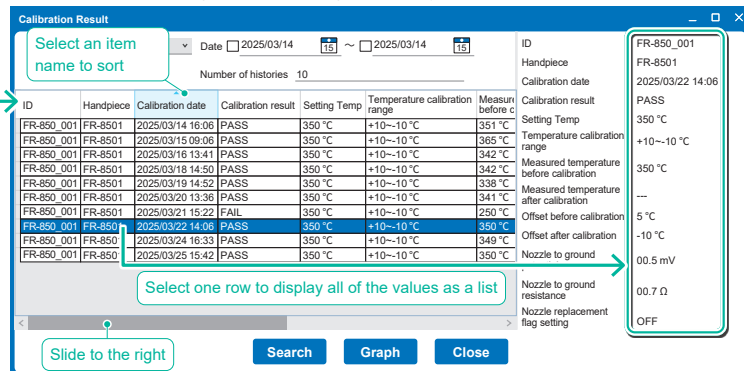
The following is an example for "Number of histories".

NOTE The calibration results can be displayed even if the connection unit is turned OFF.

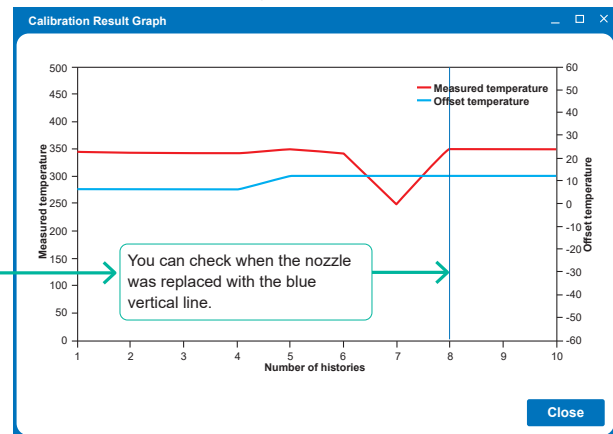
- Click the button to display the screen to input the search conditions.
- Input **[10]** in the **[Number of histories]** bar.



- Click the button.
- The search results (latest 10 entries) are displayed.



- Click button.
- The 10 search results are graphed.



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